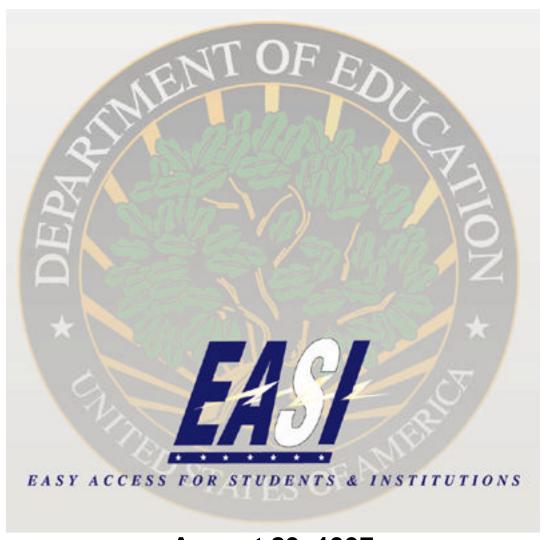# Project EASI/ED
Integration Support: Technical Proposal
for the
U.S. Department of Education

August 29, 1997

FINAL

Price Waterhouse
1616 North Fort Myer Drive
Arlington, VA 22209-3100

US DEPARTMENT OF EDUCATION
PROJECT EASI/ED: INTEGRATION SUPPORT

TECHNICAL PROPOSAL
August 29, 1997

Table of Contents

TECHNICAL PROPOSAL
August 29, 1997

Table of Contents (cont'd)

1.   INTRODUCTION

1.1   Price Waterhouse LLP

Price Waterhouse LLP (Price Waterhouse) is a leading international professional services firm providing the highest quality accounting, auditing, tax, and management consulting services to a broad spectrum of public and private sector clients. The firm was founded in 1849 in London and began operations in the United States (US) in 1890. Today we have more than 48,000 people serving clients through a network of 430 offices in 105 countries.

Work under this task order for the US Department of Education (ED) will be led by our Gateway Group. We established the Gateway Group -- originally as the Office of Government Services -- in 1973, making Price Waterhouse the first "big six" accounting firm to establish an office dedicated solely to servicing the needs of the government at the Federal, state, and local levels. Today the Gateway Group has over 750 professionals dedicated to serving our government clients. We are aware of no other firm with an established organization conducting the breadth and scope of activities equal to those conducted by the Gateway Group. The Gateway Group sets Price Waterhouse apart from other firms in its dedication to serving the Federal Government.

The Gateway Group comprises six "domains" organized around functional expertise. Each domain houses functional specialists who concentrate in their area of expertise, but who also work as part of multi-disciplinary teams drawn from several domains. For this task order, staff will be drawn primarily from the Information Technology (IT) domain. This group performs full-life-cycle system development activities, including analysis, design, construction, software reengineering, system integration, architecture analysis and design, testing, quality assurance, and related project management and system management support. IT domain staff are experienced with a wide range of technology platforms and bring to bear not only systems expertise, but also related functional expertise in such areas as accounting, operations research, etc.

Over its life, the Project EASI/ED (Easy Access for Students and Institutions/US Department of Education) integration effort will require staff with expertise in a broad range of disciplines, including:

- Requirements analysis
- Business process reengineering
- Software design and development
- System reengineering
- Hardware and software architectures
- Capacity planning
- Current and emerging technologies
- System implementation
- Financial systems and student aid processes
- Project management
- Quality assurance
- Testing
- System integration

Price Waterhouse offers ED proven expertise in all of these areas. As specific disciplines are required to support the Project EASI/ED effort, resources from throughout the firm can be made available to supplement the skills of Project EASI/ED integration team core members.

In addition to in-house resources, in cases where specific expertise is required to satisfy ED's requirements, Price Waterhouse is willing to obtain subcontractor support to fulfill these needs, subject to required approval by the General Services Administration.

1.2 Conflict of Interest Statement

Currently we are unaware of any conflict of interest in performing the work requested under this task order. However, should we identify any potential conflict of interest while performing this work, we will immediately bring it to the attention of ED to determine the impact, if any, on this task order.

2. UNDERSTANDING OF TASK ORDER REQUIREMENTS

2.1 Background

Project EASI is an effort by members of the postsecondary education community to define and to implement a customer-focused "system" to support postsecondary education. Project EASI goals will be realized through the efforts of concerned schools, lenders, servicers, guarantors, professional organizations, state agencies, and the US Department of Education (ED). Project EASI has the following objectives:

- Create a customer-focused "system" to support postsecondary education.

- Provide the customer a single point of interface with the postsecondary education community.

- Streamline, simplify, and improve the accessibility of processes associated with postsecondary education.

- Reduce costs associated with the management and delivery of services associated with postsecondary education.

Within Project EASI, Project EASI/ED is the Department of Education's initial effort to implement the Project EASI vision within its own systems and business processes. Project EASI/ED is specifically focused on those systems and processes associated with delivering and managing student financial assistance authorized under Title IV of the Higher Education of 1965, as amended. ED currently uses the following 17 systems in this area:

- Campus-Based Programs System
- Central Database System
- Central Processing System
- Direct Loan Consolidation System
- Direct Loan Origination System
- Direct Loan Servicing Systems (4)
- Electronic Data Exchange
- Federal Family Education Loan Program System
- Multiple Data Entry Systems (2)
- National Student Loan Data System
- Pell Grant Recipient and Financial Management System
- Postsecondary Education Participants System
- Title IV Wide Area Network

Project EASI/ED encompasses the functionality provided by all of the above systems, as well as additional functionality defined in the *Project EASI/ED Business Area Requirements Document* (BARD) (July 1, 1997), and ED's interaction with schools, lenders, guarantors, secondary markets, state agencies, and other participants nationwide.

Beyond the Project EASI vision, Project EASI/ED also encompasses ED's "Band Strategy." The Band Strategy is an initiative to re-architect the contracts used to deliver the current Title IV systems and related services. Today, each Title IV system is operated and maintained under one or more separate contracts. Generally, these contracts bundle diverse services encompassing data center support, software development, software maintenance, customer service, training, and a variety of manual processing (e.g., payment processing, mailing). Under the Band Strategy, these contracts would be revised so that data center support for all Title IV systems is delivered through a single vehicle -- comprising Band 1. All software maintenance and enhancement support would be delivered through one or more separate contracts comprising Band 2. All remaining services would be delivered under one or more contracts comprising

Band 3. Through the Band Strategy, ED expects to reduce the costs for operating and maintaining the Title IV systems. In addition, greater competition for Title IV contracts is expected once services are separated to more closely reflect the core competencies of prospective service providers.

2.2   Integration Support Task Order

Project EASI/ED is being developed using a tailored spiral methodology as described in the *Project EASI/ED Program Management Plan* (PMP) (January 7, 1997). This methodology encompasses seven life cycle phases through which the development effort will cycle iteratively over the course of the project. The phases are:

- Concept
- Definition
- Design
- Construction
- Test
- Implementation
- Operation

The concept phase of Project EASI was completed in January 1997, with documentation of the initial baseline of the Project EASI vision in the *Project EASI Information Strategy Plan (December 1996)* and in the *Project EASI Concept Document (revised final dated June 23, 1997)*. In December 1996, Project EASI/ED entered the definition phase of the life cycle, which will be completed through the tasks requested in the Project EASI/ED Integration Support task order.

Since Project EASI's inception in 1994, close cooperation among representatives of all sectors of the postsecondary education community and ED has been its hallmark. This close cooperation must continue throughout the tasks requested under the Project EASI/ED Integration Support task order. A high degree of cooperation and participation will help ensure that Project EASI/ED continues to reflect the Project EASI vision, and that Project EASI/ED reflects community needs and business processes as accurately as possible.

As Project EASI/ED progresses beyond the definition phase of the life cycle, ED envisions that multiple, parallel development or acquisition efforts will be undertaken to implement Project EASI/ED requirements. For example, some functional requirements may be met through outsourced services (e.g., credit card processing of aid disbursements, enrollment tracking and reporting), some through commercial-off-the-shelf (COTS) software products (e.g., program accounting), some through reuse of existing software or business logic (e.g., Federal Family Education Loan Program interest and special allowance payments functionality), and some through custom-developed software. Given this strategy, ED requires a Project EASI/ED integrator to ensure that these multiple efforts all contribute effectively and efficiently to realization of Project EASI/ED as a whole. This effort requires core competencies in total quality management, financial systems, quantitative methods, quality assurance, configuration management, project management, system analysis and design, and testing.

During this phase of Project EASI/ED, the integrator will build upon work previously completed to:

- **Define and establish an initial allocated baseline for Project EASI/ED that encompasses application, data, and technical architecture.** This baseline will serve as a framework for defining the incremental implementation efforts. It will also be the basis for comparison and evaluation of any alternative proposals for implementing Project EASI/ED (e.g., deviations in technology from the products defined in the Project EASI/ED Common Operating Environment).

- **Develop detailed plans and procedures for further implementing management discipline in Project EASI/ED.** Work in this area encompasses definition of configuration management procedures for Project EASI/ED, development of a quality assurance approach and standards, and provision of a variety of integration and project management support services. These services include strategic planning, issue tracking and reporting, risk assessment, and performance measurement.

- **Develop an acquisition strategy and implementation plan for the Band Strategy, and a transition plan for Project EASI/ED**. The acquisition strategy subtask focuses on defining the appropriate servicing groupings for each band, identifying the target provider community, and assessing the risks and issues associated with implementing the Band Strategy. The implementation plan, to be developed as an appendix to the *Project EASI/ED PMP*, will build upon the management approach identified for Project EASI/ED overall to document an approach for implementing the bands. Based upon the implementation approach and upon the results of continuing Project EASI/ED work, the Project EASI/ED Transition Plan will document a combined plan for migrating the current systems to the revised contract architecture in conjunction with the migration from current systems to Project EASI/ED.

Tasks within the Project EASI/ED Integration Support statement of work fall into three key groups.

1. **Tasks that continue the definition of the Project EASI/ED system, leading to definition of an initial baseline.** This baseline will address application distribution across a physical architecture, data distribution across a physical architecture, and an initial target technical architecture (i.e., hardware, system software, telecommunications). The three tasks that represent this work -- Task 1 (including 1a and Optional Task 1b), Task 2 (including 2a and Optional Task 2b), and Optional Task 3 -- are therefore integrally related. All three elements must be completed for the definition phase of Project EASI/ED to be complete.

2. **Tasks that support definition, planning, and integration of the Project EASI/ED system development portion of this project and of the Band Strategy contract re-architecture portion of the project**. These tasks -- Optional Tasks 6, 7, and 8 -- are interdependent. Optional Task 7, definition of the acquisition approach for the Band Strategy, must be completed before Optional Task 6 can be completed, since the management approach documented in Optional Task 6 must reflect the selected acquisition strategy. Optional Task 8, definition of a transition strategy encompassing both Project EASI/ED system development and the Band Strategy, requires completion of both the Band Strategy planning tasks, as well as critical input from Task 1, Task 2, and Optional Task 3.

3. **Tasks that establish or maintain necessary management infrastructure for the project**. These tasks are: Optional Task 4 (configuration management plan), Optional Task 6 (quality assurance plan), Optional Task 9 (integration and management support), and Optional Task 10 (prototype planning and evaluation).

Through these tasks, ED's objectives for this task order can be met. The result will be completion of the Project EASI/ED system definition phase, and establishment of a stable management infrastructure for the project. Beyond this, these tasks will lead to completion of initial plans necessary to integrate multiple parallel activities associated with Project EASI/ED and the Band Strategy in an efficient, cost-effective manner that minimizes risk to continuing service delivery.

We believe that the technical approach explained in Section 3 will enable Price Waterhouse to successfully meet ED's needs under this task order.

3. TECHNICAL APPROACH

Under this task order, Price Waterhouse will work with ED staff, the Project EASI Core Team, contractors supporting ED, and other members of the postsecondary education community, as appropriate. Through our experience during the concept and early definition phases of this project, Price Waterhouse staff have gained familiarity with the Project EASI vision, with the issues associated with Project EASI/ED, and with many members of the community. The Price Waterhouse Project EASI/ED team will build upon this experience to perform the work under this task order.

The first step in this phase of the project will be to hold a kick-off meeting with ED officials to initiate work under this task order. The purpose of this meeting will be to review the project team composition, to discuss project objectives and task order schedule, and to discuss the technical approach planned for specific subtasks. This meeting will help ensure that the entire project team -- encompassing ED managers, members of the Project EASI Core Team, and Price Waterhouse staff -- clearly understand the goals, scope, and nature of the work to be performed so that everyone can work most effectively to complete the project. The task order kick-off meeting will be held within 5 working days of task order initiation.

This section presents our technical approach to the work to be performed under this task order. It is divided into the following subsections, which reflect the major tasks specified in the statement of work:

- **Subsection 3.1 - Task 1: Develop Project EASI/ED Application Services Definition Document**. Presents the technical work plan for the two subtasks: Project EASI/ED Subsystem Definition Report (Task 1a) and Document Project EASI/ED Application Services Definition (optional Task 1b). This section describes the scope of the **Project EASI/ED Subsystem Definition Report** and of the **Project EASI/ED Application Services Definition Document**.

- **Subsection 3.2 - Task 2: Define Project EASI/ED Logical Data Model (LDM)**. Presents the technical work plan for the two subtasks: Project EASI/ED Subject Area Definition Report (Task 2a) and Define Project EASI/ED LDM (optional Task 2b). This subsection describes the scope of the **Project EASI/ED Subject Area Definition Report** and of the **Project EASI/ED LDM**.

- **Subsection 3.3 - Optional Task 3: Define Project EASI/ED Common Operating Environment (COE)**. Presents the technical work plan for defining the specific technology and standards that will be used for Project EASI/ED baseline. Describes the scope of the **Project EASI/ED COE Document**.

- **Subsection 3.4 - Optional Task 4: Develop Project EASI/ED Configuration Management (CM) Plan**. Presents the technical work plan for documenting the CM plans and procedures to be used for Project EASI/ED. Describes the scope of the **Project EASI/ED CM Plan**.

- **Subsection 3.5 - Optional Task 5: Develop Project EASI/ED Quality Assurance (QA) Plan**. Presents the technical work plan for defining the QA standards and procedures to be used for Project EASI/ED. Describes the scope of the **Project EASI/ED QA Plan**.

- **Subsection 3.6 - Optional Task 6: Revise Project EASI/ED Program Management Plan**. Presents the technical work plan for developing a new appendix to the Project EASI/ED Program Management Plan and for updating the Project Management Plan with any other changes in Project EASI/ED. The new appendix will address the management approach for implementing the Band Strategy. Describes the scope of the **Title IV Band Strategy Management Plan**.

- **Subsection 3.7 - Optional Task 7: Develop Project EASI/ED Acquisition Strategy for Re-Architecture of Title IV System and Service Contracts**. Presents the technical work plan for defining an acquisition approach for the Band Strategy, and for assessing the issues and risks associated with the Band Strategy. Describes the scope of the **Project EASI/ED Acquisition Strategy for Re-Architecture of Title IV System and Service Contracts**.

- **Subsection 3.8 - Optional Task 8: Develop Project EASI/ED Transition Plan**. Presents the technical work plan for developing a transition plan showing both the evolution of the Band Strategy and of Project EASI/ED together. Describes the scope of the **Project EASI/ED Transition Plan**.

- **Subsection 3.9 - Optional Task 9: Provide Project EASI/ED Integration Management Support**. Presents the work plan for providing the various types of integration management support requested under this task order. Describes the scope of written deliverables, including monthly status reports, issues tracking report, risk management report, meeting minutes, and briefing materials.

- **Subsection 3.10 - Optional Task 10: Provide Prototyping and Pilot System Planning and Support**. Presents the technical work plan for developing prototype or pilot system plans and for monitoring progress on such initiatives. Describes the scope of the **Project EASI/ED Prototype/Pilot Assessment Plan** and of the **Project EASI/ED Prototype/Pilot Assessment Report**.

- **Subsection 3.11 - Optional Task 11: Update Project EASI/ED Technical Documentation**. Presents the technical work plan for formally reviewing, obtaining community input and concurrence, and updating previously developed Project EASI/ED documentation.

Appendix A contains a list of all deliverables to be submitted to ED under this task order. A schedule for completion of all work under this task order, assuming specific award dates for optional tasks, appears in Appendix B. It is our understanding that all data, models, and documents developed under the Project EASI/ED Integration Support task order are ED's property and will be delivered to ED upon request.

3.1   Task 1: Define Project EASI/ED Application Services

The purpose of this task is to build upon the initial requirements identified in the *Project EASI/ED BARD* to fully define the systems, subsystems, and interfaces that will be needed to implement these requirements. The focus of this task is to define systems, subsystems, and interfaces logically. However, the results will be incorporated into the product of Optional Task 3 to show the initial recommended physical distribution of application subsystems and interfaces across the target technical architecture for Project EASI/ED.

Task 1 comprises two subtasks. The steps that will be taken to complete each subtask are described below. This approach presumes that Optional Task 1b will be awarded not later than the completion of Task 1a; that Task 2a will be awarded in conjunction with the award of Task 1a; that Optional Task 2b will be awarded not later than the completion of Task 2a; and that Optional Task 3 will be awarded not later than October 1, 1997.

3.1.1   Task 1a: Project EASI/ED Subsystem Definition Report

During this task, we will define the Project EASI/ED logical systems and subsystems, identify the requirements associated with each (based upon the *Project EASI/ED BARD*), and initially define the interaction of processes with data (based upon the logical data model from Task 2a).

Step 1.   **Develop Project EASI/ED Subsystem Definition Report Outline**

To ensure that analysis and product development are correctly focused, and that ED's goals for this task are fully realized, we developed an annotated outline for the **Project EASI/ED Subsystem Definition Report**. This outline, presented in Appendix C, will be used as a basis for the final deliverable, and for the analysis steps described below.

Step 2.   **Perform Preliminary Analysis**

This step comprises the preliminary analysis required to support system and subsystem definition. It reviews and updates the Activity Hierarchy Diagram (AHD) for consistency with the Computer-Aided Software Engineering (CASE) tool -- Composer by IEF. It also serves to identify information needed by each process as a basis for subsystem definition.

     Step 2.1   **Reconcile AHD with Computer CASE Tool**

Project EASI/ED functionality is modeled in the Composer AHD as functions and their decomposed processes. This AHD was obtained by porting the Project EASI/ED target model data flow diagram (DFD) activities to the Composer CASE tool at the end of the functional requirements definition task performed under the Project EASI Requirements Support task order. The purpose of this step is to reconcile the AHD with the Composer tool to ensure consistent level of process decomposition. This step also establishes the traceability between AHD processes and Project EASI/ED requirements in the Project EASI/ED Requirements Traceability Matrix (RTM), establishing a method to track AHD processes to requirements at any stage of development.

     Step 2.2   **Perform Preliminary Interaction Analysis**

During this step, the team will analyze the Project EASI/ED target model DFDs and entity-relationship diagram (ERD) documented in the *Project EASI/ED BARD* to record Project EASI/ED AHD leaf process actions on *BARD* ERD data. The results of this step form the basis for later performing detailed analysis of process interaction with the LDM, described in step 3 below.

Step 3.   **Define Systems and Subsystems**

During this step, the team will define Project EASI/ED systems and subsystems. We will analyze the specific actions (i.e., expected effects) that the processes shown in the Project EASI/ED AHD have on the data objects in the Project EASI/ED LDM (developed in Task 2a). The results of this interaction analysis will be captured in a process/data Create, Read, Update, Delete (CRUD) matrix in Composer. Composer will be used to perform clustering analysis to derive natural groupings of related processes and data objects that exhibit high cohesion and low coupling. The team will review these Composer-generated groupings as a primary input in the definition of Project EASI/ED systems and subsystems. The team will also perform additional analysis to identify other systems and subsystems that may not necessarily be identified through interaction analysis as explained above, but are required in order to fully meet Project EASI/ED requirements (e.g., analytical processing/decision support reporting).

Step 4.   Develop Project EASI/ED Subsystem Definition Report

The team will document Project EASI/ED systems and subsystems, and the associated activities and requirements for each, in a draft **Project EASI/ED Subsystem Definition Report**. This report will be delivered to ED not later than 6 weeks after task initiation. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED Subsystem Definition Report**. To facilitate the review process, we will provide at ED's request a presentation on the report's content.

3.1.2   Optional Task 1b: Project EASI/ED Application Services Definition Document

Optional Task 1b builds upon the results of analysis performed in Task 1a. During this task, the team will expand upon the work already performed by:

- Assessing whether the requirements each system or subsystem satisfies are best met through on-line or batch processing.

- Identifying physical access requirements for user access to each applicable application system or subsystem.

- Identifying candidate systems or subsystems for implementation via COTS software.

- Identifying candidate systems or subsystems for reuse of existing Title IV system application software, data, or business rules.

- Identifying and defining in detail (i.e., attributes, volume, timing, media) all internal interface requirements between Project EASI/ED systems and subsystems.

- Identifying and defining in detail (i.e., attributes, volume, timing, media) all external interface requirements between Project EASI/ED systems and subsystems and external users or systems.

Step 1.   Develop Project EASI/ED Application Services Definition Document Outline

To ensure that analysis and product development are correctly focused, and that ED's goals for this task are fully realized, we will develop an annotated outline for the **Project EASI/ED Application Services Definition Document**. We will meet with appropriate ED staff to discuss the outline. Any changes as a result of the discussion will be made to the outline, which will then be used as a basis for the final deliverable, and for the analysis steps described below. The annotated outline will be completed within 10 working days of task initiation.

Step 2.   Identify Subsystem Processing and Access Mode

Working from the systems and subsystems defined in the **Project EASI/ED Subsystem Definition Report**, the team will assess whether each system or subsystem should operate in the batch or on-line processing mode. The team will also identify physical access requirements to determine user physical access modes applicable to each system or subsystem. This determination will be based upon analysis of the transactional and physical access needs associated with Project EASI/ED requirements related to each system or subsystem.

Step 3.   Analyze System and Subsystem Implementation Alternatives

A number of implementation alternatives are possible for various Project EASI/ED systems and subsystems -- e.g., outsourcing, COTS software, reuse of existing Title IV application logic or business rules, development of custom software. The purpose of this step is to assess each system or subsystem to identify those that are candidates for implementation via COTS software and those that are candidates for reuse of existing Title IV application logic or business rules.

Step 3.1   Identify Candidate Subsystems for COTS Package Implementation

The team will examine each system or subsystem defined in the **Project EASI/ED Subsystem Definition Report** to determine whether its functionality could be implemented using a COTS software package. We will analyze requirements, processes, and data interaction for each system or subsystem to determine if they could be delivered fully or in part by a COTS package. The team will perform this analysis in the context of the recommended Project EASI/ED framework architecture identified in the *Project EASI/ED Technical Vision and Target Architecture (TVTA) Report* (September 1997) to ensure compatibility and to ascertain any possible conflicts.

The team will not perform a full evaluation of various COTS package alternatives under this task. However, we will review systems and subsystems for their suitability to the following categories of COTS implementation:

- Implementation with a standard, unmodified COTS package to meet all system or subsystem requirements.

- Implementation with COTS software as a core system support package, supplemented with custom software to meet all system or subsystem requirements.

- Implementation with modified COTS software tailored to meet all system or subsystem requirements.

Step 3.2   Identify Title IV System Components for Re-use

To leverage existing Title IV legacy systems, the team will analyze suitability of their application logic and business rules for re-use in further development effort. The team will analyze current systems processes (documented in the *Project EASI BARD*) that are associated to specific system or subsystem processes (by mapping through related requirements in the Project EASI RTM) for significant portions of common functionality. In cases where this occurs, the current systems processes will be examined to determine if the functionality is processed in the manner envisioned by the system or subsystem process.

Through this analysis we will identify those business processes embedded in existing Title IV systems that have application logic, inputs, outputs, data interaction definitions, and business rules that could be re-used in Project EASI/ED systems or subsystems (as defined in the **Project EASI/ED Subsystem Definition Report**). Further analysis regarding the specific architectures of individual Title IV systems would be required to determine if specific code or data can be re-used. Analysis of components at this physical level will not be performed during this task.

Step 4.   Define Internal Interfaces

In parallel with the work performed in Steps 2 and 3, the team will define in detail each of the internal interfaces among the Project EASI/ED systems and subsystems defined under Task 1a. Based upon the requirements associated with each system or subsystem, the team will assess the needs for direct exchange of data between subsystems. Each interface will be defined in terms of attributes, timing and periodicity of flows, volume of data exchanged, and information currency requirements.

Step 5. **Define External Interfaces**

In parallel with the work performed in Steps 2, 3, and 4, the team will define all external interfaces to Project EASI/ED. The *Project EASI/ED BARD* represents these external interfaces as data flow objects between Project EASI/ED system activities and external entities. Through the activities described below, the team will define in detail each of these interfaces (attributes, timing, volumes, data currency requirement, preferred transmission media). For this analysis, the Application Services Definition team will work with the LDM team, as the data that is gathered will also be used to completely populate and confirm the Project EASI/ED LDM (Optional Task 2b).

Step 5.1 Review Available Information

The team will gather the information needed to perform this analysis through GFI, through Project EASI/ED documentation, and through Joint Information Gathering (JIG) sessions to be held with ED staff and community representatives.

At the outset of this step, the team will review existing Project EASI/ED requirements, activities, data flows, and data objects documented in the *Project EASI/ED BARD* and other GFI to preliminarily define each of the interfaces. The team will document this information in the Project EASI/ED Information Repository, a Microsoft Access database that will be used to capture, track, and manipulate data related to this task that cannot be captured in Composer.

Step 5.2 Establish JIG Session Schedule

The results of the analysis performed in Step 5.1 will be used as a basis for conducting JIG sessions. The list of JIG sessions proposed to perform this work is presented in Appendix E to this proposal. These sessions must occur between November 15, 1997, and February 28, 1998. Price Waterhouse Project EASI/ED team members will work with ED managers to determine the precise schedule for these sessions, appropriate locations, specific participants for each.

Step 5.3 Conduct JIG Sessions

In advance of each JIG session, the team will prepare read-ahead packages for intended participants. These packages will serve as the basis for discussion during each JIG session. Through the JIG sessions, the team intends to:

- Identify and confirm the attributes involved in each interface with Project EASI/ED.

- Define in detail each attribute identified, including all factors required for interface definition and for completion of the LDM.

- Identify and confirm requirements for physical access to Project EASI/ED systems or subsystems.

Issues arising out of JIG sessions will be documented for further research by community representatives, ED staff, or Price Waterhouse Project EASI/ED team members. The team will document the results of each session in the Project EASI/ED Information Repository for use by the LDM Team and by the Application Services Definition Team.

Step 6.   **Revise Interaction Analysis**

Project EASI/ED LDM development will be proceeding in parallel with the activities being performed under Task 1a and Optional Task 1b. As the LDM approaches completion, the team will repeat the interaction analysis performed for Task 1a, and will update the CRUD matrix in Composer to reflect LDM changes. Based upon this analysis, the team will also update system and subsystem definitions to reflect the updated CRUD matrix and to show the each system's or subsystem's associated interfaces.

Step 7.   **Provide Input Regarding Physical Allocation of Systems and Subsystems**

The team will provide information on Project EASI/ED systems and subsystems to the COE team as a basis for determining the initial physical allocation of systems and systems across the technical architecture. Information provided will include system and subsystem definitions, processing mode, access mode, and process/data interaction information. The team will work with the COE team to establish the initial physical allocation.

Step 8.   **Develop Project EASI/ED Application Services Definition Document**

The team will document the results of the preceding analysis, incorporating the updated results of the Task 1a analysis, in a draft **Project EASI/ED Application Services Definition Document**. This document will be delivered to ED not later than 16 weeks after task initiation. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED Application Services Definition Document**. To facilitate the review process, we will provide at ED's request a presentation on the document's content.

3.2   Task 2: Develop Project EASI/ED Logical Data Model

The Project EASI/ED logical data model (LDM) will represent the subject areas, entity types, and attributes required by Project EASI/ED at the enterprise level. The LDM is particularly important to Project EASI/ED given the implementation strategy ED plans to adopt. As each increment of functionality is parceled out to a specific service provider for implementation, the universe of data that is to be used by that functionality will be defined in standardized terms. This will enable Project EASI/ED as a whole to work on a consistent set of data -- that both ED and community members understand -- regardless of how many different service providers or implementation approaches are adopted to implement the functionality.

Task 2 comprises two subtasks. The steps that will be followed to complete each subtask are presented below. This approach presumes that Optional Task 2b will be awarded not later than the completion of Task 2a; that Task 1a will be awarded in conjunction with the award of Task 2a; that Optional Task 1b will be awarded not later than the completion of Task 1a; and that Optional Task 3 will be awarded not later than October 1, 1997.

3.2.1   Task 2a: Project EASI/ED Subject Area Definition Report

Using the Project EASI/ED ERD from the *Project EASI/ED BARD* as a starting point, the team will identify all subject areas and associated entity types required for the Project EASI/ED LDM. The team will also identify the requirements associated with each entity type.

Step 1.   **Task Initiation**

These actions lay the foundation for defining the data requirements for Project EASI/ED.

         Step 1.1   **Develop Project EASI/ED Subject Area Definition Report Outline**

To ensure that analysis and product development are correctly focused, and that ED's goals for this task are fully realized, we developed an annotated outline for the **Project EASI/ED Subject Area Definition Report**. This outline, presented in Appendix C, will be used as a basis for the final deliverable, and for the analysis steps described below.

Step 1.2   Define Standards and Procedures

In parallel with steps 1.1 and 1.2, the team will define a set of standards and procedures that will guide the work performed under Task 2. These will include data modeling standards, data modeling session procedures, and encyclopedia management procedures. Where appropriate, standards and procedures will be coordinated across the project team.

Step 2.   Develop Subject Area LDM

Step 2.1   Identify Entity Types

Input to this task includes the Project EASI/ED ERD (as presented in the *Project EASI/ED BARD*), current systems models developed under the Project EASI Requirements Support task order, and other current system documentation provided by ED. The team initially will identify all entity types in the Project EASI/ED ERD and identify the appropriate subject area to which each belongs. Data from the current systems models and documentation will be used to augment the team's understanding of required entity types and of subject area relationships. Project EASI/ED subject areas and entity types will be documented in Composer by IEF.

Step 2.2   Add Characteristic and Associative Entity Types

Data classes (i.e., groups of attributes) identified in the Project EASI/ED ERD will be reviewed and normalized into additional characteristic and associative entity types, as required. A characteristic entity type is a category of entity type that further describes the independent or kernel entity type. An associate entity type is a category of entity type that further describes two or more different entity types and is dependent upon them for identification. Each additional entity type will be assigned to the appropriate subject area as it is identified.

Step 2.3   Perform Initial Attribute Identification

Next, the team will identify, at a minimum, the attributes required to construct the unique identifier for each entity type. When necessary, additional research will be performed to obtain all detail necessary to fully document each attribute according to the LDM standards. Full documentation includes narrative definition, size, format, syntax level edits, allowable values, accuracy requirements, precision requirements, and access rights and security requirements. Standards for documentation and definitions for each of these characteristics will be included in the data modeling standards developed during step 1.3 of this task.

Step 2.4   Update Project EASI/ED Requirements and Mapping

Based upon the work performed in the preceding steps, the team will review and update the mapping between the Project EASI/ED LDM, the requirements (documented in the Project EASI/ED RTM), and the source of each requirement. This mapping will be documented in the Project EASI/ED RTM. Each entity type introduced into the LDM will be mapped back to the requirements that apply. In some instances, a new or more detailed requirement may be added as detail is added to the LDM.

Step 2.5   Document Initial Baseline LDM

When the LDM is completed for the subject area level of detail, the team will document the initial baseline LDM in the CASE tool -- Composer by IEF. The configuration management procedures developed as part of task initiation will prescribe how models will be named and configuration management of the Composer models will be coordinated at the project-wide level.

Step 3.   **Develop Project EASI/ED Subject Area Definition Report**

The team will document the Project EASI/ED LDM at the subject area level in a draft **Project EASI/ED Subject Area Definition Report**. This report will present each subject area with a diagram, followed by detailed reports regarding the entity types and identifier attributes contained in that subject area. This report will be delivered to ED not later than 6 weeks after task initiation. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED Subject Area Definition Report**. To facilitate the review process, we will provide at ED's request a presentation on the report's content.

3.2.2   Optional Task 2b: Project EASI/ED LDM

Optional Task 2b continues work begun during Task 2a by extending the definition of the Project EASI/ED LDM to a greater level of detail. By the completion of this task, the Project EASI/ED will be consistently defined to the attribute level.

Step 1.   **Develop Project EASI/ED LDM Outline**

To ensure that analysis and product development are correctly focused, and that ED's goals for this task are fully realized, we will develop an annotated outline for the **Project EASI/ED LDM**. We will meet with appropriate ED staff to discuss the outline. Any changes as a result of the discussion will be made to the outline, which will then be used as a basis for the final deliverable, and for the data gathering and analysis steps described below. The annotated outline will be completed within 10 working days of task initiation.

Step 2.   **Complete Development of Project EASI/ED LDM**

The team will follow an iterative process to gather information regarding data requirements, definitions, and supporting detail; model this information in the Project EASI/ED LDM; and confirm the results of the modeling process.

Step 2.1   **Participate in Joint Information Gathering Sessions**

The LDM team will work closely with the Application Services Definition team to plan and conduct JIG sessions with representatives of ED and of the external community. At each session, LDM team member(s) will gather information regarding the attributes (fields) and entity types (records) that constitute the information flow in the interfaces between Project EASI/ED process and external entities. Information about each these attributes -- e.g., size, valid values -- will also be documented through these sessions. LDM team members will use model object definition forms as a tool to help them capture complete information on each object during the JIG sessions. These forms will then be the basis of input to step 2.2.

Step 2.2   **Conduct Data Modeling Sessions**

Using information gathered through the joint modeling sessions, the LDM team will conduct modeling sessions to incrementally develop the Project EASI/ED LDM. Through these sessions, the team will review information identified as belonging in the LDM to ensure that meta data (i.e., information describing the attribute) is complete, consistent, and compatible with Project EASI/ED LDM objectives. One of these objectives is to minimize redundancy and to eliminate update anomalies by normalizing the data in the model.

During the data modeling sessions, the team will also:

- Identify any deviations from the modeling standards and follow-up to obtain missing information.

- Check each component of the LDM for consistency, compliance, and fit (i.e., normalization).

14

- Ensure that each entity type maps to one or more requirements as documented in the Project EASI/ED RTM.

- Verify that all requirements documented in the RTM map to the Project EASI/ED LDM.

Results of information gathering and modeling sessions will be reviewed monthly (or at a less frequent interval determined by ED) with key ED and community representatives. The purpose of these reviews will be to confirm the validity of data and relationships presented in the LDM, to provide resolutions or recommendations regarding issues identified by the Price Waterhouse Project EASI/ED team, and to identify additional issues that require follow up action.

Step 2.3   Finalize LDM

When the iterative cycle of information gathering, modeling, and review is complete, the team will finalize the Project EASI/ED LDM. At this point, the LDM will include all subject areas, entity types, and attributes believed to be required for Project EASI/ED. Attribute definitions will include narrative definitions, size, format, syntax level edits, allowable values, accuracy requirements, precision requirements, and access rights and security requirements. The LDM will also identify all relationships among objects and will show data ownership at the enterprise level. When the LDM is deemed complete, the team will conduct a structured walk through of the LDM with ED and with appropriate community representatives.

Step 3.   Make Recommendations Regarding DBMS

In parallel with the activities in step 2, the team will provide input to the Optional Task 3 COE team regarding database management system (DBMS) evaluation and selection. This input will reflect the modeling and analysis performed in step 2. The impact of data volumes, frequency, use, or other characteristics that might affect the selection of the most appropriate DBMS for part or all of Project EASI/ED will be considered during this step.

Step 4.   Define Initial Data Distribution Strategy

The team will describe an initial data distribution strategy for Project EASI/ED based on the analysis and modeling performed in step 2. This description will be provided to the COE team for consideration in establishing the initial allocated baseline for Project EASI/ED under Optional Task 3. Input will include consideration of data distribution, partitioning, and replication strategies.

Step 5.   Develop Project EASI/ED LDM Document

The team will document the Project EASI/ED LDM at the attribute level in a draft **Project EASI/ED Logical Data Model Document.** This document will present each subject area with a diagram, followed by detailed reports regarding the entity types and attributes contained in that subject area. The report will be delivered to ED not later than 16 weeks after task initiation. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED LDM Document**. To facilitate the review process, we will provide at ED's request a presentation on the LDM content.

3.3   Optional Task 3: Define Project EASI/ED Common Operating Environment

The *Project EASI/ED TVTA Report* identifies a recommended framework technical architecture for Project EASI/ED. Through Optional Task 3, the team will build upon the agreed-upon framework architecture and upon the work performed in Tasks 1 and 2 (described above). The result will be definition of a set of standards, technologies, and products that will comprise the Project EASI/ED COE. The technical architecture defined through this document will be populated with agreed-upon technologies (i.e.,

hardware, software) and will be structured to reflect the application and data distribution requirements of Project EASI/ED. This combination of technical architecture, data (as represented by the Project EASI/ED LDM), and application (defined through the Application Services Definition task) will constitute the initial Project EASI/ED baseline. While it is expected that this baseline will evolve over time, it will provide an essential reference point against which requested or recommended deviations in technology, functionality, or data can be assessed.

As described in the statement of work, the objectives of this task are to define a Project EASI/ED COE that:

- Serves as a framework for understanding and standardizing systems and their components.

- Provides a model for satisfying integrated system requirements.

- Decreases interface-related complexity.

- Facilitates the integration of COTS software and of standardized software engineering environments.

- Mitigates vendor dependence through compliance with "open" and de facto standards.

The steps that will be followed to perform this task are described below. This approach presumes that Optional Task 1b will be awarded not later than the completion of Task 1a; that Task 2a will be awarded in conjunction with the award of Task 1a; that Optional Task 2b will be awarded not later than the completion of Task 2a; and that Optional Task 3 will be awarded not later than October 1, 1997.

Step 1.   Develop Project EASI/ED COE Document Outline

To ensure that analysis and product development are correctly focused, and that ED's goals for this task are fully realized, we will develop an annotated outline for the **Project EASI/ED COE Document**. We will meet with appropriate ED staff to discuss the outline. Any changes as a result of the discussion will be made to the outline, which will then be used as a basis for the final deliverable, and for the data gathering and analysis steps described below. The annotated outline will be completed within 10 working days of task initiation.

Step 2.   Identify Assumptions and Constraints

In this step the team will identify any assumptions or constraints that will affect definition of the Project EASI/ED COE. These assumptions and constraints will be based upon:

- Overall objectives of Project EASI/ED.
- Architecture recommended in the *Project EASI/ED TVTA Report*.
- Architectural assumptions and constraints from the *Project EASI/ED TVTA Report*.
- Project EASI/ED requirements as documented in the *Project EASI/ED BARD*.

Step 3.   Define Conceptual Architecture

Technical architecture services define the capabilities derived by an architecture and facilitate organization of the architecture. Services are implemented within architecture via architectural components. Architectural components may include hardware, platforms, telecommunications technologies, and system application software.

The team will undertake the following steps to define the conceptual architecture for Project EASI/ED.

Step 3.1   Identify and Define Architectural Components

The team will identify the architectural components required by Project EASI/ED, and will define the functionality to be provided by each of these components. The architectural services for which components will be identified are:

- Operating system services
- Data management and interchange services
- Network services
- Interprocess communication services
- Security services
- System management services
- Hardware services
- Input/output services
- Software engineering services

The *TVTA* identifies each of these services as they relate to Project EASI/ED. During this step, the team initially will verify that the range of services identified in the *TVTA* accurately represents all services required for Project EASI/ED. The team then will build upon the *TVTA* -- and using the Project EASI/ED requirements and application services defined in the *BARD* and through the Application Services Definition task -- will identify the specific components required to implement each service.

Step 3.2   Define Component Interconnections and Dependencies

During this step the team will identify the interconnections required among the architecture components identified in step 3.1. The components, and the interconnections among them, will define the structure of the conceptual architecture. The team will also identify any dependencies between components (e.g., a specific software component may require the existence of a related hardware component). These dependencies will later be used as input to the recommendation of specific products for components.

Step 4.   Define COE Standards

The team will identify standards that apply to each component identified during step 3. These may be standards ratified by official standard bodies (e.g., XOpen, ANSI, or IEEE), or they may be industry de-facto standards. Where multiple alternative standards exist for a particular component, the alternative that best meets the Project EASI/ED objectives and requirements will be chosen for the Project EASI/ED COE.

Step 5.   Identify and Recommend Products

Building upon the work performed during the preceding steps, the team will evaluate alternative vendor products and will recommend products that most closely meet the functionality required for each component defined in step 3, and that comply with standards defined in step 4.

Step 5.1   Define Evaluation Criteria

A set of criteria will be defined for use in evaluating each candidate product. The evaluation criteria developed for the *TVTA* will be used as a starting point, and will be modified as deemed appropriate to this task. The team will work with ED managers to validate the evaluation criteria and to establish relative weights for each.

Step 5.2   Identify Alternative Products

For each component within a specific service, the team will identify a range of candidate products that comply with the standards identified through step 4, that fit into the conceptual architecture developed in step 3, and that do not conflict with any of the dependencies among components that were identified in step 3.

Step 5.3   Evaluate Alternative Products

For each component within each service, the team will evaluate alternative products against the evaluation criteria defined in step 5.1. The results of this analysis will be documented in working papers maintained by the team. The recommended products within each service and component will be documented for inclusion in the **Project EASI/ED COE Document**.

Step 6.   Define Initial Allocated Baseline

The team will develop an initial Project EASI/ED allocated baseline that encompasses application (from Optional Task 1b), data (from Optional Task 2b), and physical components identified during the preceding steps of this task. Information on system/subsystem processing modes, physical access modes, and process/data interaction (from Optional Task 1b), as well as information on initial data distribution, partitioning, and replication strategies (Optional Task 2b) will be used to allocate systems/subsystems and data to specific architectural components.

Step 7.   Develop Project EASI/ED COE Document

The team will document the recommended Project EASI/ED standards, products, and initial allocated baseline (encompassing data, application, and technical architecture) in a draft **Project EASI/ED Common Operating Environment Document**. This document will be delivered to ED not later than 33 weeks after task award. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED COE Document**. To facilitate the review process, we will provide at ED's request a presentation on the COE recommendations and on the Project EASI/ED baseline.

3.4   Optional Task 4: Develop Project EASI/ED Configuration Management Plan

Configuration management is a key discipline needed for Project EASI/ED to succeed. The purpose of this optional task is to define the configuration management process, organization, and procedures that will govern Project EASI/ED development efforts and any related activities required to support the Band Strategy.   The team will build upon Government and industry CM standards and best practices to develop a plan for Project EASI/ED.

For this task, we will complete the following steps:

Step 1.   Develop Project EASI/ED Configuration Management Plan Outline

To ensure that analysis and product development are correctly focused, and that ED's goals for this task will be fully realized, we will develop an annotated outline for the **Project EASI/ED CM Plan**. We will meet with appropriate ED staff to discuss the outline. Any changes as a result of the discussion will be made to the outline, which will then be used as a basis for the final deliverable, and for the data gathering and analysis steps described below. The annotated outline will be completed within 10 working days of task initiation.

Step 2.   Gather Information

The data gathering step will focus on two areas: (1) gathering information regarding ED's current CM processes and tools, and (2) gathering industry and Government standards and best practices to guide Project EASI/ED CM.

Information regarding ED's current CM practices, forms, and tools will be used to establish an understanding of the current environment. Information gathered will be used to:

- Inform the design of Project EASI/ED CM procedures and practices that will be used to migrate the Title IV systems from the current environment into the Band Strategy and into Project EASI/ED.

- Provide input regarding formats that ED is successfully and comfortably using, that may be adapted for Project EASI/ED.

- Guide recommendations regarding an appropriate CM tool to be used for Project EASI/ED.

We expect to gather this information from Government Furnished Information (GFI), to be identified at the task kick-off meeting, and through interviews with appropriate ED staff.

Information regarding industry and Government CM standards and best practices will be used as a basis for defining procedures and processes for Project EASI/ED. These processes and standards will be tailored to meet the specific needs of this project.

Step 3.   Define Project EASI/ED CM Process and Procedures

In conjunction with Step 2, the team will begin designing Project EASI/ED CM guidelines. To perform this step, the team will first define the scope of CM requirements for each phase of the Project EASI/ED life cycle – from definition through operation. The team will then define the relationship between Project EASI/ED CM processes and those of other Title IV systems. Building upon this picture, the team will define specific Project EASI/ED CM processes and procedures to address:

- **Configuration Identification** - involves uniquely identifying individual system components, and documenting the functional and physical characteristics of components. Tells managers what the system configuration is, what the system components are, and what version of each component is in use.

- **Configuration Control** - involves managing the release of new components and of updated components throughout the life cycle. The goal of configuration control is to establish mechanisms that help ensure production of quality software. Tells managers what items are controlled, what changes have been made to controlled components, and who controls those changes.

- **Configuration Status Accounting** - involves providing a status record of all configuration items comprising a baseline, thus maintaining the traceability of all changes to the baseline throughout the life cycle. Tells managers what changes have been made to the system and how many components were affected by a change.

- **Configuration Auditing** - verifies that the system is built according to applicable requirements, standards, or contractual agreements. Verifies that all required hardware and software configuration items are produced, that the current configuration items comply with specified requirements, that configuration items are completely and accurately documented, and that all change requests are resolved. Tells managers whether the system satisfies all requirements and whether all changes have been incorporated in the version of the system in use.

As the procedures for each of these areas are developed, the team will define the appropriate Project EASI/ED CM organization and staffing required to implement the procedures. The role of each planned participant will be defined in relation to the procedures and processes.

Step 4.   Develop Project EASI/ED CM Plan

The team will document the recommended Project EASI/ED CM scope, relationships, organization, processes and procedures in a draft **Project EASI/ED Configuration Management Plan**. This plan will be delivered to ED not later than 44 days after task award. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that they may be incorporated into the final **Project EASI/ED Configuration Management Plan**. To facilitate the review process, we will provide at ED's request a presentation on the CM recommendations.

3.5   Optional Task 5: Develop Project EASI/ED Quality Assurance Plan

Delivery of quality services and products is important to any project. For Project EASI/ED, the plan to use multiple, parallel implementation efforts – spanning a number of providers – makes the delivery of consistent quality services and products more complex. For this approach to be effective, it is important to have a well-thought-out quality assurance program that establishes across-the-board guidelines regarding quality assurance. The purpose of this task is to develop a **Project EASI/ED Quality Assurance (QA) Plan** that will apply to Project EASI/ED and to any related activities associated with the Band Strategy.

For this task, we will complete the following steps:

Step 1.   Develop Project EASI/ED Quality Assurance Plan Outline

To ensure that analysis and product development are correctly focused, and that ED's goals for this task will be fully realized, we will develop an annotated outline for the **Project EASI/ED QA Plan**. We will meet with appropriate ED staff to discuss the outline. Any changes as a result of the discussion will be made to the outline, which will then be used as a basis for the final deliverable, and for the data gathering and analysis steps described below. The annotated outline will be completed within 10 working days of task initiation.

Step 2.   Define Project EASI/ED QA Approach

The team will build upon Government and industry best practices to define the Project EASI/ED QA approach. The following steps will be conducted in parallel to develop this approach.

Step 2.1   Establish Standards for Software Development and Documentation

The input for this task will be:

- ED standards.
- Project EASI/ED Program Management Plan (January 1997).
- Work being performed on the Project EASI/ED COE (Task 3).
- Other industry or Government standards and guidelines.

Using these materials, the team will develop an understanding of the software development environment expected for Project EASI/ED and of documentation that ED requires to effectively manage and monitor the project throughout its life. The team will then establish standards governing the production of any documentation required for Project EASI/ED.

Step 2.2   Analyze QA Requirements

During this step, the team will survey available information regarding Project EASI/ED to assess the areas for which quality assurance will be required. For each remaining phase of the development life cycle, the team will analyze the most current information regarding expected approach to identify:

- Areas of highest prospective risk to project success.

- Key inputs and outputs.

- Key activities and processes associated with each phase.

Based upon this analysis, the team will develop a recommended set of methodologies, tools, and or techniques to be used to perform quality assurance across this project. This step will include consideration of QA, quality control, performance measurement, continuous improvement, and QA training requirements.

Step 2.3 Define QA Organization

Once an understanding of the QA approach is established, the team will define a QA organization appropriate for managing and delivering QA for Project EASI/ED at the project level. The team will identify roles and responsibilities for each position within the recommended organization. During this step, the team will also define the relationships between Project EASI/ED QA responsibilities and those of other ED organizations and entities. We will also estimate the level of effort required to deliver effective QA support to Project EASI/ED within this organization.

Step 3. Develop Project EASI/ED QA Plan

The team will document the recommended Project EASI/ED QA approach, scope, relationships, organization, and techniques in a draft **Project EASI/ED Quality Assurance Plan**. This plan will be delivered to ED not later than 44 days after task award. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED QA Plan**. To facilitate the review process, we will provide at ED's request a presentation on the plan's content.

3.6 Optional Task 6: Revise Project EASI/ED Program Management Plan

The *Project EASI/ED Program Management Plan (PMP)* (January 1997) documents the management strategy for Project EASI/ED system development efforts. Through this optional task, the *Project EASI/ED PMP* will be supplemented with an appendix that extends this management approach to the Band Strategy. This appendix -- the **Title IV Band Strategy Management Plan** -- will document the plan for migrating the current Title IV systems and contracts to the Band Strategy. A clear understanding of the Band Strategy -- including management approach, documentation requirements, projected schedule, roles and responsibilities, and expected outcomes -- is essential to the Band Strategy's success. This appendix is intended to be a tool for responsible ED managers to use in executing their individual responsibilities with regard to the Band Strategy. In addition, this plan is a critical input to the **Project EASI/ED Transition Plan**, to be developed under Optional Task 8 of this task order.

The steps that will be taken to define the **Title IV Band Strategy Management Plan** are described below. This approach presumes that Optional Task 7 will be awarded before, or in conjunction with, award of Optional Task 6.

Step 1. Develop Project EASI/ED Title IV Band Strategy Management Plan Outline

To ensure that analysis and product development are correctly focused, and that ED's goals for this task are fully realized, we will develop an annotated outline for the **Title IV Band Strategy Management Plan**. We will meet with appropriate ED staff to discuss the outline. Any changes as a result of the discussion

will be made to the outline, which will then be used as a basis for the final deliverable, and for the data gathering and analysis steps described below. The annotated outline will be completed within 10 working days of task initiation.

Step 2.   Gather Data

The first step in our analysis and planning process will be to gather data regarding the Band Strategy. This information will include:

- Proposed scope of services for each band.

- Recommended acquisition strategy (from Optional Task 7).

- Progress to date on planning and implementing the Band Strategy (including identification of any contracts awarded, system migration or conversion status, acquisition planning activities, etc.).

- Roles and responsibilities within the existing ED organization with regard to the Band Strategy.

- Milestone dates -- including review requirements, contract end dates, target migration dates, etc.

We anticipate obtaining this information from ED documentation and through interviews with key ED staff involved in planning and implementing the Band Strategy. Upon task award, we will provide ED a list of documentation and interviews required to support this activity.

Step 3.   Analyze Information and Develop Plan

The **Title IV Band Strategy Management Plan** will be developed as an appendix to the *Project EASI/ED PMP*. As such, the management philosophy and techniques defined for Project EASI/ED will, by definition, be extended to the Band Strategy unless otherwise noted in this appendix. The following steps will be taken to analyze available information and to develop the management plan.

Step 3.1   Review Project EASI/ED Management Approach and Tools

The first step the team will take is to review the *Project EASI/ED PMP* to identify those elements of the management approach that are applicable to the Band Strategy, and those that need to be modified or added for the Band Strategy. At this point, the proposed outline for this plan may be modified to reflect the team's increased understanding of the Band Strategy. Any substantive modifications to the outline will be coordinated with ED.

Step 3.2   Define Expected Sequence and Timing of Transition

For this step, the team will work with information provided by ED, the results of the Acquisition Strategy task performed under this task order, and from information already available regarding the current Title IV systems. The team will develop a high-level schedule showing the projected sequence and timing of each Title IV system's migration to the band strategy. This schedule will also show projected award dates (real or required) for contract award to support this migration schedule. This schedule will be captured in text and in Microsoft Project. Any dependencies in the migration sequence will also be noted at this time.

Step 3.3   Define Work Plan/Major Tasks and Activities

In conjunction with other Step 3 activities, the team will develop a work plan showing the major tasks needed to transition one generic system from the current contractual architecture to the Band Strategy. Each task will be defined in terms of scope of work, input required, output produced and, as applicable, principal steps required to complete the task. In addition, the expected time to complete each task will be identified. If the task completion time is expected to vary widely from system to system, the factors driving that variance will be identified and a range of task durations will be identified. The team will

review this representative work plan with responsible ED managers to ensure that it addresses all required activities.

Once the generic model work plan is agreed upon, the team will apply this model to each system within the planned migration schedule begun in Step 3.2. The work plan will be tailored to reflect specific contractual complexities (e.g., special services, multiple contracts) that affect the generic model. Once all major tasks required for transition of each system are incorporated into the schedule, expected durations will be tailored to reflect the specific system being migrated. The results of this task will also be reviewed with responsible ED managers.

Step 3.4   Define Organization Roles, Responsibilities, Structures

For this task, the team will use information gathered from ED regarding the current organization structure and assignment of roles regarding the Band Strategy. Taking this information in combination with the specific work requirements defined through Step 3.3, the team will recommend an organization structure for managing implementation of the Band Strategy, key roles, and responsibilities associated with each role.

Step 3.5   Identify Required Documentation, Reviews, Checkpoints

Based upon the analysis performed during Step 3.3, the team will derive a list of documentation required to complete each increment of Band Strategy implementation. Each document will be briefly defined, correlated to a specific milestone or life cycle event (e.g., initiating migration), and identified with a responsible organization. The team will also confirm with ED any requirements for formal reviews -- internal or external -- and will ensure that these are reflected in the work plan developed during Step 3.3.

Step 3.6   Define Risks and Planned Risk Mitigation Strategy

The team will assess the technical, management, and budgetary risks associated with the Band Strategy transition plan, taking into consideration those risks and issues identified in the Acquisition Strategy (Optional Task 7). Each risk identified will be defined and categorized (technical, management, and/or budgetary). The team will then define one or more risk mitigation strategies for each risk. These strategies may reflect ED initiatives that are already underway, management processes and techniques documented in the *Project EASI/ED PMP* or in the **Title IV Band Strategy Transition Plan**, and/or additional techniques or initiatives that should be considered for implementation.

Step 3.7   Define Control Mechanisms

Control mechanisms and issue tracking procedures recommended in the *Project EASI/ED PMP* will be tailored, as necessary, to support effective oversight of the Band Strategy implementation.

Step 4.   **Review and Update Project EASI/ED PMP**

In addition to developing the new appendix to the *Project EASI/ED PMP*, this task also encompasses reviewing and updating the main text of the *PMP*. To accomplish this, the team will gather information from ED managers, the Project EASI Core Team, and from members of the Price Waterhouse Project EASI/ED team regarding Project EASI and Project EASI/ED developments and progress. The team will review the entire *PMP* and will ensure that it accurately reflects the current management plan and approach for Project EASI/ED. Changes will be incorporated in change pages, which will be submitted to ED along with the draft **Title IV Band Strategy Management Plan** for review.

Step 5.   **Develop Title IV Band Strategy Management Plan**

The team will document the Band Strategy transition work plan, risk assessment, revised management procedures, and recommended organization, roles, and responsibilities in a draft **Title IV Band Strategy Management Plan**. This plan will be delivered as an appendix to the updated *Project EASI/ED PMP*. The updated PMP and management plan will be delivered to ED not later than 85 days after task initiation. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED Program Management Plan**, including the final **Title IV Band Strategy Management Plan**. To facilitate the review process, we will provide at ED's request a presentation on the recommended management plan.

3.7   Optional Task 7: Develop Acquisition Strategy for Re-Architecture of Title IV System and Service Contracts

The Department of Education currently operates, maintains, and obtains related services for the 17 Title IV systems via one or more contracts per system. Generally, each of these contracts reflects "bundled" services, such as data center operations, software maintenance and development, customer service support, training, telecommunications support, data entry and other manual processing (e.g., check processing, mailing). The Band Strategy will re-architect this contract structure by "un-bundling" these services into bands that more closely reflect specific core competencies of potential service providers. Band 1 will comprise all data center operations. Band 2 will encompass software development and maintenance. Band 3 will encompass other support services. The purpose of this task is to quickly review the existing contracts for the Title IV systems to identify who is providing which services for which system today, and to develop an acquisition strategy for allocating those services to appropriate bands and to contracts within a band.

The approach that will be taken to performing this task is described below. This approach presumes that this task will be awarded before, or in conjunction with, the award of Optional Task 6.

Step 1.   **Develop Project EASI/ED Acquisition Strategy for Re-Architecture of Title IV System and Service Contracts Outline**

To ensure that analysis and product development are correctly focused, and that ED's goals for this task are fully realized, we will develop an annotated outline for **the Project EASI/ED Acquisition Strategy for Re-Architecture of Title IV System and Service Contracts**. We will meet with appropriate ED staff to discuss the outline. Any changes as a result of the discussion will be made to the outline, which will then be used as a basis for the final deliverable, and for the data gathering and analysis steps described below. The annotated outline will be completed within 10 working days of task initiation.

Step 2.   Gather Data

The data gathering step for this task is critical to its success, since the time allowed for analysis under this task is very short. Upon task initiation, the team will require copies of every contract to be considered for incorporation within the Band Strategy. This set of contracts is expected to include, but is not limited to:

- Campus-Based Programs System Contract
- Central Database System Contract
- Central Processing System Contract
- ED Central Facility Contract
- Direct Loan Origination/Consolidation Contract
- Direct Loan Servicing Contracts (up to four)
- Federal Family Education Loan Program Contract
- Multiple Data Entry Contracts (two)
- National Student Loan Data System Contract (up to two)
- Postsecondary Education Participants System Contract
- Title IV Wide Area Network Contract
- Any involved contracts for supporting services, such as mailing, Public Inquiry Contractor, customer service, training, etc.

The team anticipates reviewing up to 20 contracts to perform this analysis.

In addition, the team will need information regarding the proposed scope of services for each band and regarding any steps already taken to move specific systems or services into a specific contract within a band. To the extent that ED staff have documented specific plans for migration to the Band Strategy, these plans will also be needed immediately upon task award. The team anticipates gathering any additional information needed, that is not already documented, through interviews with key ED staff and managers.

Step 3.   Analyze Data and Develop Strategy

The team will analyze the information gathered through Step 2 to develop a high-level acquisition strategy for the Band Strategy. The acquisition strategy will:

- Identify the current distribution of services across existing systems and contracts.

- Define which services should be bundled into which band.

- Within bands, identify which services should be bundled into separate contracts.

- Identify risks associated with the Band Strategy acquisition approach and potential risk mitigation techniques.

- Discuss implications for ED and contractor responsibilities (e.g., liability for system failures) under the Band Strategy.

- List unresolved issues raised through this analysis for further consideration under Optional Task 6.

The team will perform the following actions to perform this analysis.

Step 3.1   Confirm Understanding of Bands

Based upon GFI or upon interviews with ED managers, the team will clarify its understanding of the Band Strategy, and will document this in a schematic showing the bands and the scope of services included within each band.

Step 3.2   **Analyze Current Title IV Contracts**

Each Title IV contract provided by ED will be analyzed to determine:

- Title IV system(s) supported.

- Current provider(s).

- Period of performance and structure (e.g., base years and option years).

- Categories of services provided (e.g., data center operations, software maintenance, software enhancement, mailing, check processing, training).

- Number of staff currently engaged in providing each category of service (if it is possible to obtain this information).

- Contracting Officer's Technical Representative.

This information will be used immediately to support definition of an acquisition strategy, but will also be used during Optional Task 6 to help define the management plan.

Step 3.3   **Allocate Services to Bands and to Contracts**

Based upon the analysis in Step 3.2, the team will allocate each increment of service within each existing Title IV contract to a band. Within bands, the team will group services into "bundles" that are recommended for award under separate contracts. If it seems that more than one contract should be awarded to provide a specific "bundle" of services, the team will note that, make a recommendation regarding the number of contracts to be awarded, and explain the rationale for the recommendation.

Step 3.4   **Identify Risks and Issues**

As the analysis progresses, the team will identify risks (technical, management, budgetary) that may be associated with the acquisition strategy and/or with implementation of the Band Strategy.   Areas that will be assessed for risk include:

- Organization and staffing
- Skill requirements
- Management complexity
- Transition and/or acquisition timing
- Technology

Each risk identified will be defined and categorized (technical, management, and/or budgetary). The team will then assess the risks and will identify one or more risk mitigation strategies for each. The team will also identify issues that do not lend themselves to resolution through a risk mitigation approach or that need to be resolved as Band Strategy planning progresses.

Step 4.   **Develop Acquisition Strategy**

The team will document the recommended acquisition strategy in a draft **Project EASI/ED Acquisition Strategy for Re-Architecture of Title IV System and Service Contracts (Acquisition Strategy)**. This document will be delivered to ED not later than 44 days after task award. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED Acquisition Strategy**. To facilitate the review process, we will provide at ED's request a presentation on the recommended acquisition approach.

3.8   Optional Task 8: Develop Project EASI/ED Transition Plan

Project EASI/ED is an extremely complex project. It encompasses both the implementation of "new" functionality (as defined in the *Project EASI/ED BARD*) and the migration to a more efficient contract structure (through the Band Strategy). The work under Optional Task 6 will establish the management plan for implementing the Band Strategy, independent of Project EASI/ED system development plans. While this is an essential first step in Project EASI/ED planning, the next critical step is to assess the relationship between the projected roll out of Project EASI/ED functionality in relation to the Band Strategy migration plan. The **Project EASI/ED Transition Plan** will document the combined result of these two efforts, establishing the first detailed management-level plan for implementing Project EASI/ED.

Because of the complexity of this task, and the iterative nature of our approach to developing this plan, close coordination with ED is exceptionally important. Because of this, we will seek in-depth meetings with responsible ED staff at least once a month just to discuss progress and findings for this task. The steps that will be taken to develop the **Project EASI/ED Transition Plan** are described below. This approach presumes that Task 1, Task 2, Optional Task 3, Optional Task 6, and Optional Task 7 are awarded before, or in conjunction with, award of Optional Task 8.

Step 1.   Develop Project EASI/ED Transition Plan Outline

To ensure that analysis and product development are correctly focused, and that ED's goals for this task are fully realized, we will develop an annotated outline for the **Project EASI/ED Transition Plan**. We will meet with appropriate ED staff to discuss the outline. Any changes as a result of the discussion will be made to the outline, which will then be used as a basis for the final deliverable, and for the data gathering and analysis steps described below. The annotated outline will be completed within 10 working days of task initiation.

Step 2.   Gather Data

The data gathering step for this task will commence with task award and will continue through completion of all related tasks -- i.e., Optional Task 1b, Optional Task 2b, Optional Task 3, Optional Task 6, and Optional Task 7. Results of these tasks will be fed into the **Transition Plan** to develop a picture of Project EASI/ED implementation possibilities and of the Band Strategy migration schedule. In addition, information gathered through the related tasks will provide necessary insight into ED requirements for formal reviews, acquisition cycles, and other factors that must be considered in the **Transition Plan**.

Step 3.   Analyze Data and Develop Transition Plan

Data analysis and development of the Transition Plan will be an iterative process that occurs across the period of performance for this task. The plan can only be finalized after completion of all related tasks, but the planning process itself will consume the intervening time. The activities that will be performed for this analysis are described below.

In addition to the information gathered through related work under this task order, the team will require information regarding the internal structure of each of the current Title IV systems. The team will need to understand which systems or subsystems exist within each of the Title IV systems, and what functionality resides in each. Much of this information may already be available through the current systems models developed under the Project EASI Requirements Support task order, or through GFI already provided. If additional detail is needed, we will provide ED a list of required GFI at the earliest possible date after task initiation. The team may also need to gather some information, or to confirm its understanding of specific Title IV system functionality and structure, through interviews with appropriate ED staff.

Step 3.1   Document Band Strategy Migration Schedule

As the Band Strategy migration scheduled is developed (Optional Task 6), the Transition Planning team will work closely with Band Strategy team to understand the proposed schedule. The team will familiarize itself with projected migration timing and sequence, factors driving the sequence, and with services affected by each conversion (based upon the results of Optional Task 7). Using this information, the team will begin building the Project EASI/ED transition master schedule based upon the Band Strategy input.

Step 3.2   Map Project EASI/ED Systems/Subsystems to Current Title IV Systems

In conjunction with Step 3.1, the Transition Planning team will work with the Application Services Definition team to understand the Project EASI/ED systems and subsystems. The team will familiarize itself with the definition of each system or subsystem, and with the requirements supported by each. Using mapping data already resident in the Project EASI/ED RTM, the Transition Planning team will correlate proposed Project EASI/ED systems and subsystems with the existing Title IV systems.

Step 3.3   Correlate Project EASI/ED Systems and Subsystems to Band Strategy

The team will then correlate Project EASI/ED systems and subsystems to the migration plan for the Band Strategy. This step in the analysis will be used to provide insight regarding possible priorities for implementation of Project EASI/ED systems or subsystems. In addition, by graphically showing the relationship between Project EASI/ED systems and subsystems and the current Title IV systems, the team can assess what Project EASI/ED functionality would be required before an entire Title IV system could be replaced.

As work under Optional Task 1b progresses and candidate Project EASI/ED systems and subsystems are identified for reuse of Title IV applications, data, or business rules, this information will be appended to this drawing. This information will add another dimension to the transition planning analysis, as it will highlight dependencies between current systems and Project EASI/ED functionality. These dependencies will be another factor to consider in devising the recommended implementation schedule for Project EASI/ED.

Step 3.4   Assess Feasibility of Partial Shut Down

Using the analysis performed in Step 3.3, the team will assess the feasibility of partially replacing a specific Title IV system as corresponding Project EASI/ED systems or subsystems are implemented. For example, the team might determine that early delivery of the disbursement system/subsystem is recommended. Given this, they would assess whether it is possible to deactivate the disbursement system/subsystem within a specific Title IV system when the Project EASI/ED functionality comes on line. This analysis will focus on the modularity of the Title IV system, the technical risk and feasibility of interfacing remaining portions of the system with the Project EASI/ED system or subsystem, and the relative expected cost and complexity of such an undertaking.

Step 3.5   Incrementally Build Project EASI/ED Transition Plan

As the Project EASI/ED LDM and application services definitions mature, the Transition Planning team will begin incrementally building a proposed schedule for implementing Project EASI/ED. This schedule will reflect the sequence and projected timing for implementing any enterprise level database(s), and for implementing each Project EASI/ED system or subsystem. As the plan develops, the team will document all assumptions that accompanied their analysis -- e.g., the impact of implementation approach on prospective implementation date, impact of analysis performed in Steps 3.3 and 3.4.

Step 3.6   Overlay Project EASI/ED Schedule and Band Strategy Schedule

As the Project EASI/ED transition schedule is developed, the team will overlay it with the Band Strategy work plan developed under Optional Task 6. Through an iterative comparison and assessment of the schedules in relation to one another, the team will develop a master Project EASI/ED transition schedule that encompasses the delivery of new Project EASI/ED functionality, as well as migration of the current

systems to the Band Strategy. For example, if it is determined that Project EASI/ED functionality will entirely replace one of the current Title IV systems before that system is scheduled to be migrated, then it could be dropped from the Band Strategy. (If for some reason the Project EASI/ED functionality was not implemented in time, the Title IV Band Strategy Management Plan would still reflect the appropriate migration date for the subject system.)

Step 3.7   Identify Candidate Systems for Conversion to Project EASI/ED COE

In concern with the analysis performed for Step 3.6, the team will identify current systems that will not be replaced by Project EASI/ED functionality in the near term. The team will then assess whether these systems should be considered for conversion from their existing technical architecture to the Project EASI/ED COE. The assessment will focus on long-term value of the Title IV system to ED and to the community, the amount of time the system is expected to continue operating, the maintenance and contractual support issues associated with maintaining it in its current environment, and the technical complexity and feasibility of converting the system to the COE. Recommendations derived from this analysis will reflect an expectation of higher performance, substantial cost-savings, or significantly improved service delivery through the conversion. These recommendations, and the supporting rationale, will be reviewed with ED managers.

Step 3.8   Define Organizational Roles and Responsibilities

Within the context of the existing ED organization, the team will recommend specific roles and responsibilities to support the Project EASI/ED transition. To the extent that a program management office is recommended, the team will also recommend an appropriate structure and staffing for such an office. The team will not undertake to recommend an entire organizational redesign to support Project EASI/ED (or the Band Strategy) through work under this task order. While this is important work to be undertaken as the Band Strategy and Project EASI/ED transition plans are developed, insufficient information is available at this point to undertake such an analysis within the time allowed.

Step 3.7   Identify Issues and Risks

As the analysis proceeds, the team will identify issues and risks associated with the proposed transition plan. Risks will be defined and categorized (technical, management, and/or budgetary). The team will assess each risk to identify one or more risk mitigation strategies for each. Issues will be formally logged in the Project EASI/ED issue tracking system, and will be reviewed with appropriate ED managers throughout the task period of performance. Unresolved risks will be identified in the **Project EASI/ED Transition Plan** so that they can be addressed as the implementation effort progresses.

Step 4.   Document Project EASI/ED Transition Plan

The team will document the recommended transition plan -- including projected schedule, sequence of change, anticipated impact on existing Title IV systems, and organization and responsibilities -- in a draft **Project EASI/ED Transition Plan**. This document will be delivered to ED not later than 33 weeks after task initiation. Formal comments on the deliverable are requested within 25 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED Transition Plan**. To facilitate the review process, we will provide at ED's request a presentation on the plan's content.

3.9   Optional Task 9: Provide Project EASI/ED Integration Management Support

A wide variety of flexible, timely integration and project management support is required to support ED on Project EASI/ED. These tasks include establishing and maintaining various performance measures and tracking systems, providing in-depth expertise in cross-project technical disciplines, assisting with planning, helping to communicate with ED staff and with the community regarding technical progress and issues, and performing regular risk assessments. The purpose of this task is to provide a dedicated team of skilled staff who can provide this management and integration support. Not only will this team help with the day-to-day progress of Project EASI/ED, they will be responsible for ensuring that key integration issues are identified and acted upon in a timely manner.

Price Waterhouse proposes delivering support under Task 9 through a series of optional tasks, each comprising 1 month's integration management support. These tasks are represented in the deliverable summary, shown in Appendix A, and in the accompanying cost proposal. In addition, we have added an optional task to provide integration support to the Hope Scholarship program.

The approach that will be taken to providing integration management support is described below.

3.9.1   Meeting Support

The Integration Support team will ensure one or more representative of the Price Waterhouse Project EASI/ED team attends each Project EASI Core Team meeting and Project EASI Steering Committee meeting. In addition, the Integration Support team will attend selected technical and management meetings with ED staff, representatives of other government organizations, and community representatives. The team will support these meetings at the request of ED's Project EASI/ED Project Manager or as necessary to facilitate the integration work required for Project EASI/ED. At the ED Project Manager's request, the Integration Support team will assist in preparing for and conducting Project EASI/ED meetings. This work will include developing recommended agendas, facilitating discussions, leading meetings, and preparing minutes.

3.9.2   Project EASI War Room

The Integration Support team will ensure that the Project EASI/ED master schedule board, issue tracking board, and technical displays in the Project EASI war room are initially filled in. The team will then ensure that these boards are updated no less than once a month and will update specific boards more often if necessary to ensure that content is current. In addition to maintaining and improving displays regarding Project EASI/ED, the team will make recommendations regarding appropriate Project EASI data to display in the room. These recommendations will encompass content, purpose, and format for such displays.

3.9.3   Issue Tracking

The team will update and refine the Project EASI/ED Issue Tracking Database, currently maintained in Microsoft Access. This database will be used to track all technical, management, and policy issues identified in association with Project EASI/ED. Key elements of the database will be verified with responsible ED managers before the database update is completed.

The team will also support the Project EASI/ED Project Manager in tracking and managing the issue resolution process defined in the *Project EASI/ED PMP*. As issues are resolved or more current status is available, the team will maintain this information in the Project EASI/ED Issue Tracking Database. Reports from this database will be posted in the Project EASI war room.

3.9.4 Monthly Reporting

At each Project EASI Core Team meeting, the Integration Management team will brief Core Team members on Project EASI/ED progress, metrics, issues, and planned activities. In addition, the Integration Management team will prepare the monthly progress report that is delivered to ED in letter format. This report will document the work performed during the previous month, major tasks planned for the coming month, progress in relation to metrics, and any issues that may affect timeliness, quality, or budget of assigned tasks.

3.9.5 Metrics

In keeping with the guidelines in the Project EASI/ED PMP, the team will define metrics appropriate to the tasks performed for the remainder of the definition phase of the life cycle and for each task being performed. For each metric recommended, the team will develop a narrative definition, presentation format, and baseline set of values. Once these metrics are agreed upon by ED managers, the team will track progress against each metric and will include the results in the monthly reports.

3.9.6 Risk Management

The Integration Team will develop a Project EASI/ED Risk Management Database in Microsoft Access. This database will reflect the risk management approach documented in the *Project EASI/ED PMP* and will be used to support an active risk management program. The team will define the proposed fields for the database and coordinate these with ED managers before implementing the system.

The database will initially be populated with the most current risk assessment data available from the Project EASI/ED PMP. Following its implementation, the Integration Team will perform a project risk assessment once each month to (a) identify status in relation to previously identified risks and (b) to identify and analyze new risks. Results of these assessments will be documented in the Risk Management Database, and will be reported to Project EASI/ED managers during regular meetings.

3.9.7 Formal Reviews

The *Project EASI/ED PMP* identifies formal life cycle reviews that must be conducted. For each formal review occurring during the period of performance for this task, the team will plan the review, prepare presentation materials, and lead the review alone or in conjunction with ED managers. The team will also take minutes for each review, prepare and distribute these minutes, and ensure that any action items or issues identified during the review are documented in the Project EASI/ED Issue Tracking System.

3.9.8 Strategic Planning

At ED's request, the team will provide qualified staff from the Price Waterhouse Project EASI/ED team to participate in strategic planning efforts related to Project EASI/ED, including implementation of the Band Strategy.

3.9.9 Overall Coordination

The Integration Support team is responsible for maintaining a cross-project view of all activities associated with Project EASI/ED and of Project EASI activities (reported through the Project EASI Core Team) that relate to this project. In this role, the Integration Support team members will support ED managers in any activities that relate to the overall integration effort. The team will also actively identify and help resolve issues relating to Project EASI/ED integration.

3.9.10 Presentation Support

The team will provide support for Project EASI/ED presentations at conferences and meetings throughout the country. This support will encompass:

- Preparation of a standard, modular briefing that can be used for general purpose Project EASI/ED presentations to a variety of audiences.

- Preparation of tailored briefing materials for use with specific audiences.

- Delivery of presentations at conferences and meetings, at ED's request.

- Participation in conferences and meetings at which other individuals are the primary presenters, but for which specific technical support may be required to respond to questions.

The team will provide input that can be used to maintain the standard, modular briefing throughout the period of performance for this task. Presentation materials will be developed and delivered using Microsoft Powerpoint.

The team will draw upon resources from throughout the Price Waterhouse Project EASI/ED team to perform presentations. The team anticipates presenting or participating in up to two meetings or conferences per month throughout the period of performance for this task.

3.9.11 Technical Integration Support

Technical integration support comprises three areas: best practice studies, security support, and other technical support.

Best Practice Studies. Over the entire period of performance for Task 9, encompassing all options, the team will perform up to three best practices studies at ED's request. These studies will focus on areas identified by ED in conjunction with the team. For each study, the team will perform the following steps:

- **Step 1 - Develop Outline**. The team will prepare a draft outline for Best Practices Study Report. This outline will be reviewed with ED, updated, and used as a basis for data gathering, analysis, and preparation of the final deliverable.

- **Step 2 - Gather Data**. The team will gather best practices data from sources that are appropriate to the topic being studied. To the degree applicable, the team will capitalize upon Price Waterhouse internal resources to gather best practices information.

- **Step 3 - Perform Analysis**. The team will perform this step based upon the information gathered and upon the outline agreed upon with ED.

- **Step 4 - Document Report**. The team will document its findings in a draft **Best Practices Study Report**. This report will be delivered to ED for review and comment. Formal comments are requested within 10 work days of ED's receipt of the report so that the comments can be promptly incorporated in a final **Best Practices Study Report**.

Security Support. A member of the integration team will function as a security expert for Project EASI/ED. This team member will be responsible for researching, understanding, and providing input and recommendations regarding security issues for this project.

Other Technical Support. The Integration Support team will work with ED to actively support resolution of technical issues related to Project EASI/ED. At ED's request, members of the Price Waterhouse team will attend meetings or review documents regarding specific related technologies.

3.9.12 Hope Scholarship Support

Under this task (Optional Task 9k), we will support ED staff responsible for defining the attributes required for a Hope Scholarship record. Work under this task will include:

- Assisting ED in planning JIG sessions to define the attributes in a Hope Scholarship record, including planning agendas, recommending participating populations, and preparing presentation materials.

- Conducting JIG sessions and facilitating discussions to define the attributes required for Hope Scholarships.

- Preparing minutes for JIG sessions to determine the attributes for Hope Scholarships.

The team will also work with ED managers to develop Hope Scholarship-related questions to be added to a census.

3.10   Optional Task 10: Provide Prototyping and Pilot System Planning and Support

Prototypes, pilot programs, and interim improvements are an extremely effective way of gaining early value during a system development effort. For the purposes of this task, these terms are defined as:

- **Prototypes** are used to demonstrate a specific aspect of system functionality, particularly a user interface. They are used to inform the design of the overall system (e.g., by providing insight into how users prefer to interact with the system) and to provide the workability of a concept (e.g., whether a system solution is achievable and appropriate for given functionality).

- **Pilots** are used to try out business processes or concepts among a representative subset of the organizations ultimately expected to implement the process. Pilots may use prototype technology to facilitate the trial. Pilots may be used to inform the design of a system (e.g., by clarifying or modifying requirements) or to prove the viability of a concept (e.g., demonstrating that invoice disbursements work).

- **Interim improvements** involve using new technology or techniques (e.g., Project EASI/ED requirements and architecture) along with current systems to provide near-term benefit to users. An example of an interim improvement would be use of the Internet to access data from various existing ED systems regarding a student's financial aid history.

These techniques represent an opportunity to provide early value to users and to maintain the momentum of long-term projects. ED hopes to undertake up to three such projects during the coming year. To gain maximum value from some initiatives, it is important that each one be carefully selected for high value in relation to investment (time, funds, human capital) and that the initiative be well planned. The purpose of this task is to develop well-structured plans for up to three such initiatives. These plans are intended not only to define the scope, participation, purpose, and timing for each initiative, but also to define the criteria that will be used to evaluate the initiative's success. In addition to planning each initiative, this task encompasses follow-up monitoring of progress and results to ensure that full value to Project EASI/ED is obtained.

The steps that will be taken to develop a **Project EASI/ED Prototype/Pilot Assessment Plan** are described in subsection 3.10.1. The steps that will be taken to monitor an initiative and to document progress in a **Project EASI/ED Prototype/Pilot Assessment Status Report**, are described in subsection 3.10.2.

3.10.1 Prototype/Pilot Assessment Planning

This sub-task encompasses those activities associated with identifying candidate projects and with planning well-structured prototype or pilot projects. The team will perform the following steps for each project initiated by ED.

Step 1. **Develop Project EASI/ED Prototype/Pilot Assessment Plan Outline**

To ensure that analysis and product development are correctly focused, and that ED's goals for this task are fully realized, we will develop an annotated outline for a **Project EASI/ED Prototype/Pilot Assessment Plan**. We will meet with appropriate ED staff to discuss the outline. Any changes as a result of the discussion will be made to the outline, which will then be used as a basis for the final deliverable, and for the data gathering and analysis steps described below. The annotated outline will be completed within 10 working days of task initiation.

For each prototype/pilot initiative ED undertakes after the first, the team will review the outline already developed with ED managers to determine whether any revisions need to be made. These revised outlines will be completed within 5 working days of task initiation for each subsequent task.

Step 2. **Identify Prototype/Pilot Project Candidates**

Through work performed under the Project EASI Requirements Support task order, the Price Waterhouse Project EASI/ED team has already met with Project EASI Core Team members to identify a list of candidate projects. The results of this meeting are documented in the working paper presented in Appendix F of this proposal.

The team would undertake the following steps at the moment when ED expresses readiness to proceed with the first prototype/pilot plan. For subsequent efforts, the team would review this list with ED to identify appropriate candidates for subsequent projects.

Step 2.1 **Obtain Prototype/Pilot Project Ideas from ED Staff**

The team will work with ED to circulate among ED managers the prototype/pilot project ideas identified by the Project EASI Core Team. Through written input or up to two meetings, the team would solicit comments regarding the candidates already identified, as well as additional ideas.

Step 2.2 **Define Prototype/Pilot Project Selection Criteria**

The team will define, in conjunction with ED, a set of criteria to be used in selecting prototype/pilot projects to undertake. Examples of criteria might include technical feasibility, complexity (technical, organizational, legal), estimated cost (time, dollars, staff), near-term value to users, and value to Project EASI/ED.

Step 2.3 **Evaluate Prototype/Pilot Candidates**

The team will evaluate each of the Project EASI/ED prototype/pilot candidates using the criteria determined in Step 2.2. The results of this evaluation will be documented in a letter report comprising a matrix accompanied by a brief summary of the supporting rationale. These results will be presented to ED managers.

Step 3. **Develop Assessment Plan**

When ED selects a candidate project for implementation, the team will develop an assessment plan that addresses:

- Boundaries of the prototype or pilot project (i.e., functionality, entry and exit point within business process, duration).

- Candidate technologies, if appropriate.

- Appropriate organizations to participate in the project, taking into consideration the need to include a representative sampling of organizations that will ultimately be required to implement the functionality.

- Metrics for measuring the project's progress and success, including a definition, presentation format, data source identification, and reporting frequency for each metric.

The team will develop the assessment plan based upon: (1) existing Project EASI/ED documentation, (2) a prototype/pilot description agreed-upon with ED, (3) applicable information regarding current systems or contracts, to be provided by ED managers, and/or (4) input from the Project EASI Core Team regarding community participation.

Step 4.   Document the Project EASI/ED Prototype/Pilot Assessment Plan

The team will document the recommended plan, and a format for the related **Project EASI/ED Prototype/Pilot Assessment Report**, in a draft **Project EASI/ED Prototype/Pilot Assessment Plan**. This plan will be delivered to ED not later than 4 weeks after task initiation. Formal comments on the deliverable are requested within 14 calendar days of ED's receipt of the draft so that the comments may be incorporated into the final **Project EASI/ED Prototype/Pilot Assessment Plan**. This review time is an exception to the statement of work requirements, which specify 25 days for ED review of this deliverable. To facilitate the review process, we will provide at ED's request a presentation on the plan's content.

3.10.2   Prototype/Pilot Assessment Reporting

Once a prototype/pilot project is initiated, consistent monitoring of progress and results is essential for ED to obtain maximum value from the project. The team will perform the following steps to monitor active projects.

Step 1.   Monitor Project Progress and Results

Using the metrics identified in the **Project EASI/ED Prototype/Pilot Assessment Plan**, the team will monitor the progress of the initiative. This assessment will include progress in relation to projected schedule and cost, as well as consideration of any other metrics defined. The team will also seek insight into issues associated with the prototype/pilot project, and feedback regarding the lessons learned by the project team. If Project EASI/ED requirement changes are recommended as a result of the project, the team will also identify these so that they can be submitted through the formal configuration management process for consideration by responsible managers. The responsible Integration Support team member will contact the prototype/pilot project team at least twice every month, and will attend key meetings whenever possible to gain maximum insight into the effort.

Step 2.   **Document the Project EASI/ED Prototype/Pilot Assessment Report**

At the end of each calendar month following initiation of the prototype or pilot project, the team will document the results of its assessment in a **Project EASI/ED Prototype/Pilot Assessment Report**. This letter report will be submitted to ED. To facilitate the review process, we will provide at ED's request a presentation on the team's assessment.

3.11   Optional Task 11: Update Project EASI/ED Technical Documentation

The *Project EASI/ED BARD* established an initial set of high-level data and process requirements for Project EASI/ED. As work progresses on the project, these requirements will be modified because of new insight regarding processes and data. Beyond this, program changes, technology advancements, and evolving customer expectations may also lead to revised requirements. As with any system development project, critical system documentation must fully and accurately reflect current requirements to be a useful tool. In the case of Project EASI/ED, this critical documentation was developed with substantial input from the external community. The purpose of this task is to perform a formal review of the *Project EASI/ED BARD* and the *Project EASI/ED Cost/Benefit Analysis* (CBA) (September 1997) to ensure that they reflect these changes, that community agreement is obtained on any requirements changes, and that the Project EASI vision is retained.

The paragraphs below describe the steps that will be taken to perform this task.

Step 1.   **Develop Summary of Revised Requirements**

As requirements changes are identified through work performed on any other task awarded under this task order, the team will document these changes in the Project EASI/ED RTM. During this step, the team will review all such recommended changes, assess the nature of the changes, categorize the changes to facilitate a review (e.g., complexity, functional area affected, scope), and document a summary of all changes.

Step 2.   **Plan Requirements Review Meeting**

Once the full nature of changes to be discussed are understood, the team will work with ED managers and Project EASI Core Team staff to identify a date and appropriate participants for up to three requirements review meetings. During the first meeting, the team will review all proposed changes. A second meeting will be conducted, if necessary, to resolve detailed issues in a specific area, to follow-up on broad issues that were unresolved through the first review, and/or to discuss the impact of changes on specific documents. A third meeting will be conducted, if necessary, to resolve any issues still open after the second meeting.

Step 3.   **Determine Impact of Changes on Documentation**

Following step 1, and in parallel with step 2, the team will assess the impact any requirements changes have on the *Project EASI/ED BARD* and the *Project EASI/ED* CBA. Updates to the BARD will encompass revisions to previously identified requirements, addition of new requirements, and updates to the main text of the deliverable. While the basic scope of the *Project EASI/ED CBA* will not be revised through this task (i.e., analyzing physical implementation alternatives vice the relative value of requirements), the analysis will be updated as necessary to reflect changes in requirements or the addition of new requirements.

Step 4.   Update Documentation

Based upon the results of steps 2 and 3, the team will update the **Project EASI/ED BARD** and the **Project EASI/ED CBA**. Draft versions of each updated document, with changes clearly marked, will be delivered to ED for review not later than 45 days after task initiation.   Formal comments are requested within 25 days of ED's receipt of these documents so that final comments can be incorporated in revised final versions of the **Project EASI/ED BARD** and the **Project EASI/ED CBA**.

4. MANAGEMENT APPROACH

4.1 Project Team Organization

This section describes the Price Waterhouse project team's structure for this task order. Staff will be organized into two principal groups working for the project manager. These groups -- System Development, and Integration and Analysis -- reflect the major disciplines required to move the project forward through this and subsequent phases of the life cycle. Within each of these groups, teams will be formed to execute specific project tasks as they are awarded. In addition, a Quality Assurance team will support the project manager as a staff function. Refer to Exhibit IV-1 for an illustration of the project team's organization. This structure is designed to be flexible, allowing for the addition of key management staff within an established structure as work expands under the Project EASI/ED Integration Support task order. Initial lead personnel and their roles are described below.

Project Partner

Every Price Waterhouse engagement is led by a partner responsible for delivering superior service. The project partner has full decision-making authority to fulfill this responsibility. For this task order, Susan Pentecost will be the project partner. Ms. Pentecost is currently the project partner for work Price Waterhouse is performing on Project EASI/ED. She has more than 17 years of experience with information systems planning, analysis, management, and development. Prior to joining Price Waterhouse, Ms. Pentecost worked for the US Department of Education, gaining considerable experience with the Title IV student financial aid programs, the supporting systems, and issues associated with the current delivery mechanisms.

Project Manager

Ms. Pentecost will also be the project manager for work performed under this task order. In this role, she will oversee day-to-day activities, ranging from initial planning through development of all deliverables. The project manager advises and consults on technical aspects of the task, reviews all work products and supporting work papers to ensure quality control, and ensures that all required Price Waterhouse resources are made available. Ms. Pentecost will be assisted in this role by the following key managers.

System Development Group

Application Services Definition Team Lead - *Hardish Nandra* has more than 12 years of experience in information systems development and implementation. He has significant experience in project management, both traditional and Information Engineering-based system development technologies, and all phases of the system development life cycle. Mr. Nandra managed the development of large- and medium-sized systems for a variety of clients in the US and in India. During the past 11 months he played a lead role on the Price Waterhouse Project EASI/ED team, helping to develop the *Project EASI Concept Document* and to lead the requirements definition task that led to development of the *Project EASI/ED BARD*.

Logical Data Model Team Lead - *Fred Locks* has 19 years of progressive experience in information systems development and implementation for commercial, local government, and Federal government clients. His experience encompasses all phases of the system development life cycle, as well as project management. Mr. Locks is expert in the areas of system development methodologies, database management system technology, data architecture, and with a wide range of Computer-Aided Software Engineering (CASE) tools. He has developed large- and medium-sized systems in diverse functional areas, including finance, accounting, personnel and payroll, telecommunications, criminal justice, and logistics. Mr. Locks also played a lead role on the Price Waterhouse Project EASI/ED team for the past 11 months.

As individual tasks are initiated under the Project EASI/ED Integration Support task order, additional team leads will be appointed. At an appropriate point, an overall System Development Group manager will be added.

Integration and Analysis Manager

Graeme Finley has more than 7 years of experience in information systems design and development in a wide range of technical environments. His work encompasses a wide range of US and European government and commercial clients. Mr. Finley participated in designing and implementing systems for accounting, human resources, tax collection, logistics, and customer billing. He has experience in all phases of the system development life cycle, and in project management, data architecture, and a variety of CASE tools. For the past 11 months, Mr. Finley was the third of three key managers on the Price Waterhouse Project EASI/ED team. During the requirements definition task, Mr. Finley personally led all of the Joint Requirements Planning sessions with community and ED staff to define the Project EASI/ED vision, which drove Project EASI/ED requirements as a whole.

As specific tasks are awarded within the Integration and Analysis area, specific task teams will be constituted under Mr. Finley's leadership. These teams will be led, whenever possible and appropriate, by Price Waterhouse staff already familiar with Project EASI/ED.

4.2   Management Approach

Price Waterhouse formulated a management approach for this project to provide high-quality services that are tailored to ED's needs. The management approach emphasizes the following key tenets.

Status Reporting

At the end of each calendar month following task order award, Price Waterhouse will provide the Contracting Officer's Technical Representative with a written report summarizing our technical progress through the end of that month. Technical progress will be measured in relation to the work plan established at the project/task outset (as modified with ED concurrence). We will also identify activities to be performed in the upcoming month and will identify issues that affect, or potentially affect, timely and quality completion of the planned work.

In addition to these written progress reports, we anticipate meeting at regular, agreed-upon intervals with responsible ED managers and with members of the Project EASI Core Team to discuss progress to date, issues related to work being performed, and plans for remaining work. The goal of these meetings will be to ensure that all involved staff are fully aware of the progress and content of work we are performing as the work proceeds. Both written reports and progress meetings will encompass all work performed under this task order.

Client Interaction

On-going communications with ED and other involved staff will be emphasized throughout this task order. This interaction will begin at the kick-off meeting and will continue with regular interaction between Price Waterhouse team members and appropriate ED and community staff regarding specific tasks. The Price Waterhouse project manager and team leads will consult with ED managers regularly during the project to discuss the team's performance and any significant issues.

Quality Control

Price Waterhouse will use a highly structured review process to ensure that highest quality analysis and work products result from this effort. The internal review of work products and deliverables begins with clearly structured plans for peer reviews and cross-team reviews from task initiation forward. Formal in-house quality control reviews will be performed for all draft and final reports. In addition, the project manager will review work in progress. As required, additional review may be requested from other partners or technical experts within Price Waterhouse for specified deliverables or work products that the project partner/project manager identifies.

Client reviews will also be structured to provide the project team with a clear set of client comments at key points in the engagement and to provide ED the opportunity to provide meaningful reviews. Specific client review strategies will be tailored to each task to provide the greatest value within the time available from ED and community representatives.

All Price Waterhouse consulting engagements follow the firm's Guidelines for Engagement Management (GEM), which is designed to simultaneously plan and monitor work products, management reviews, and unresolved issues in complex consulting projects. The GEM system provides an integrated approach to project management and to project quality control throughout the life of an engagement – from project planning through completion. GEM has proven particularly valuable in projects involving complex issues, multiple data sources, and iterative client reviews – that is, in project environments similar to the Project EASI/ED environment.

5. **TEAM RESUMES**

(Section Omitted)

APPENDIX A

Deliverable Summary

APPENDIX A
Deliverable Summary

TASK	PRODUCT	DELIVERY DATE
Task 1a	Project EASI/ED Subsystem Definition Report	**Draft** 6 Weeks After Task Initiation (ATI) (10/14/97)[1] **Comments** 25 Calendar Days After ED Receipt of Draft (RoD) (11/7/97) **Final** 2 Weeks After Receipt of Comments (RoC) (11/14/97)
Optional Task 1b	Project EASI/ED Application Services Definition Document	**Draft** 16 Weeks ATI (3/6/98) **Comments** 25 Calendar Days after ED RoD (3/31/98) **Final** 2 Weeks After RoC (4/14/98)
Task 2a	Project EASI/ED Subject Area Definition Report	**Draft** 6 Weeks After Task Initiation (ATI) (10/14/97) **Comments** 25 Calendar Days After ED Receipt of Draft (RoD) (10/31/97) **Final** 2 Weeks After Receipt of Comments (RoC) (11/14/97)
Optional Task 2b	Project EASI/ED Logical Data Model Document	**Draft** 16 Weeks ATI (3/6/98) **Comments** 25 Calendar Days After ED RoD (3/31/98) **Final** 2 Weeks After RoC (4/14/98)
Optional Task 3	Project EASI/ED Common Operating Environment Document	**Draft** 33 Weeks After Task Award (ATA) (5/20/98) **Comments** 25 Calendar Days After ED RoD (6/15/98) **Final** 2 Weeks After RoC (6/29/98)

[1]   This delivery time represents a deviation from the period of performance requested in the statement of work. The statement of work allowed 12 weeks for completion of this phase.

TASK	PRODUCT	DELIVERY DATE
Optional Task 4	Project EASI/ED Configuration Management Plan	**Draft** 6 Weeks 2 Days ATA (10/16/97) **Comments** 25 Calendar Days After ED RoD (11/10/97) **Final** 2 Weeks After RoC (11/24/97)
Optional Task 5	Project EASI/ED Quality Assurance Plan	**Draft** 6 Weeks 2 Days ATA (11/14/97) **Comments** 25 Calendar Days After ED RoD (12/10/97) **Final** 2 Weeks After RoC (12/24/97)
Optional Task 6	Revised Project EASI/ED Program Management Plan	**Draft** 12 Weeks 1 Day ATI (12/24/97) **Comments** 25 Calendar Days After ED RoD (1/19/98) **Final** 2 Weeks After RoC (2/2/98)
Optional Task 7	Project EASI/ED Acquisition Strategy for Re-architecture of Title IV System and Services Contracts	**Draft** 6 Weeks 2 Days ATA (10/16/97) **Comments** 25 Calendar Days After ED RoD (11/10/97) **Final** 2 Weeks After RoC (11/24/97)
Optional Task 8	Project EASI/ED Transition Plan	**Draft** 33 Weeks ATI (5/20/98) **Comments** 25 Calendar Days After ED RoD (6/15/98) **Final** 2 Weeks After RoC (6/29/98)
Optional Task 9a	Project EASI/ED Integration Management Support	**Period of Performance** (PoP) 1 Month ATI (9/30/97)
Optional Task 9b	Project EASI/ED Integration Management Support	**PoP** 1 Month ATI (10/31/97)
Optional Task 9c	Project EASI/ED Integration Management Support	**PoP** 1 Month ATI (11/30/97)

TASK	PRODUCT	DELIVERY DATE
Optional Task 9d	Project EASI/ED Integration Management Support	**PoP** 1 Month ATI (12/31/97)
Optional Task 9e	Project EASI/ED Integration Management Support	**PoP** 1 Month ATI (1/31/98)
Optional Task 9f	Project EASI/ED Integration Management Support	**PoP** 1 Month ATI (2/28/98)
Optional Task 9g	Project EASI/ED Integration Management Support	**PoP** 1 Month ATI (3/31/98)
Optional Task 9h	Project EASI/ED Integration Management Support	**PoP** 1 Month ATI (4/30/98)
Optional Task 9i	Project EASI/ED Integration Management Support	**PoP** 1 Month ATI (5/31/98)
Optional Task 9j	Project EASI/ED Integration Management Support	**PoP** 1 Month ATI (6/30/98)
Optional Task 9k	Project EASI/ED Integration Management Support (Hope Scholarship Support)	**Final** Due 10 Months ATA
Optional Task 10a	Project EASI/ED Prototype/Pilot Assessment Report	**Draft** 4 Weeks ATI **Comments** 2 Weeks After ED RoD[2] **Final** 2 Weeks After RoC
Optional Task 10a	Project EASI/ED Prototype/Pilot Assessment Status Report	**Final** 5 Days After End of Each Calendar Month Through June 98
Optional Task 10b	Project EASI/ED Prototype/Pilot Assessment Report	**Draft** 4 Weeks ATI **Comments** 2 Weeks After ED RoD[2] **Final** 2 Weeks After RoC
Optional Task 10b	Project EASI/ED Prototype/Pilot Assessment Status Report	**Final** 5 Days After End of Each Calendar Month Through June 98
Optional Task 10c	Project EASI/ED Prototype/Pilot Assessment Report	**Draft** 4 Weeks ATI **Comments** 2 Weeks After ED RoD[2] **Final** 2 Weeks After RoC

[2]   The statement of work specified that ED be allowed 25 calendar days after receipt of this product to develop comments. Due to the short time allowed for completion of each plan, we request that review time be decreased to 10 working days (2 calendar weeks).

TASK	PRODUCT	DELIVERY DATE
Optional Task 10c	Project EASI/ED Prototype/Pilot Assessment Status Report	**Final** 5 Days After End of Each Calendar Month Through June 98
Optional Task 11	Revised Project EASI/ED Business Area Requirements Document	**Draft** 6 Weeks 3 Days ATI (5/21/98) **Comments** 25 Calendar Days After ED RoD (6/15/98) **Final** 2 Weeks After RoC (6/29/98)
Optional Task 11	Revised Project EASI/ED Cost/Benefit Analysis Report	**Draft** 6 Weeks 3 Days ATI (5/21/98) **Comments** 25 Calendar Days After ED RoD (6/15/98) **Final** 2 Weeks After RoC (6/29/98)

The dates in the above schedule are based upon the following task start dates:

- Tasks 1a and 2a, and Optional Tasks 4, 7, and 9k: September 2, 1997.

- Optional Tasks 1b and 2b: November 14, 1997.

- Optional Tasks 3, 5, and 8: October 1, 1997.

- Optional Task 6: September 2, 1997, award date with a September 30, 1997, task initiation date (to allow for relationship with Optional Task 7.

- Optional Task 9a-j: September 2, 1997, for first increment (Optional Task 9a) through June 1, 1998, for last increment (Optional Task 9j).

- Optional Task 11: April 6, 1998.

APPENDIX B

Schedule

APPENDIX C

Project EASI/ED Subsystem Definition Report Outline

APPENDIX C
Project EASI/ED Subsystem Definition Report

Outline

1. INTRODUCTION

This section presents general information regarding Project EASI/ED.

1.1 Background

This section will describe Project EASI/ED objectives, history, system purpose and scope, and the relationship of the *Subsystem Definition Report* (SDR) to other Project EASI/ED deliverables and the development life cycle. The purpose of this discussion is to provide readers with a context for better understanding the systems and subsystems presented in the *SDR*.

1.2 Document Organization

This section will identify each subsequent section or appendix of the report, and will briefly describe the contents of each.

1.3 References

This section will identify all references used to develop the *Project EASI/ED Subsystem Definition Report*. For each joint modeling session or management review, the name and associated organization will be noted for each participant.

2. TECHNICAL APPROACH

This section will describe the approach followed to define the Project EASI/ED systems and subsystems.

3. SYSTEM AND SUBSYSTEM DEFINITIONS

This section will document the results of the system/subsystem analysis.

3.1 Subsystem 1

This section will describe a specific Project EASI/ED system or subsystem. The section will include a brief narrative description, will present the associated Activity Hierarchy Diagram activities, and will identify the Project EASI/ED requirements that the system or subsystem supports.

3.X Subsystem X

This section will describe a specific Project EASI/ED system or subsystem. The section will include a brief narrative description, will present the associated Activity Hierarchy Diagram activities, and will identify the Project EASI/ED requirements that the system or subsystem supports.

APPENDIX A - Acronyms and Definitions

This appendix will present all acronyms used in the *SDR* and the definition for each.

APPENDIX D

Project EASI/ED Subject Area Definition Report Outline

APPENDIX D
Project EASI/ED Subject Area
Definition Report
Outline

1. **INTRODUCTION**

   1.1 **Background**

   This section will briefly describe the document's purpose; Project EASI/ED objectives, history, system purpose and scope; and the relationship of this document to other Project EASI/ED deliverables throughout the life cycle.

   1.2 **Document Organization**

   This section will identify each subsequent section or appendix of the report, and will briefly describe the contents of each.

   1.4 **References**

   This section will identify all references used to develop the *Project EASI/ED Subject Area Definition Report*. For each joint modeling session or management review, the name and associated organization will be noted for each participant.

2. **TECHNICAL APPROACH**

   This section will summarizes the technical approach for developing the Project EASI/ED Logical Data Model (LDM). The methodology presented will encompass the activities required to complete both Task 1a and Optional Task 1b. The point in this process at which the Subject Area Definition Report was generated will be noted and explained.

3. **SUBJECT AREA REPORTS**

   This section describes the components of each subject area as presented in the current subject area diagram. A high-level subject area diagram of the entire Project EASI/ED LDM will be presented in this section.

   3.1 **Subject Area 1**

   This subsection will present a narrative description of the subject area, describing the principal objects presented in the subject area diagram. The subsection will also include the subject area diagram representing this piece of the overall Project EASI/ED LDM.

   3.X **Subject Area X**

   This subsection will present a narrative description of the subject area, describing the principal objects presented in the subject area diagram. The subsection will also include the subject area diagram representing this piece of the overall Project EASI/ED LDM.

4. **ENTITY AND REQUIREMENTS MAPPING**

This section will present the mapping between the Project EASI/ED requirements (as documented in the Project EASI/ED RTM) and the entity types presented in *the Project EASI/ED Subject Area Definition Report*. The purpose of this section is to document the requirements that support inclusion of each entity type in the Project EASI/ED LDM.

APPENDIX A   -   Naming Standards and Class Words List

This appendix presents the naming standards and the class words list used for naming model objects in the Project EASI/ED LDM.

APPENDIX B   -   Acronyms and Definitions

This appendix presents all acronyms used in the *Project EASI/ED Subject Area Definition Report*.

APPENDIX C   -   Abbreviations and Definitions

This appendix presents all abbreviations used in the Project EASI/ED LDM.

APPENDIX E

Joint Information Gathering Session Plan

APPENDIX E
Joint Information Gathering Session Plan

Session #	Organizational Representation	Days Needed	Subject Matter/ Data Association
1	Accreditation Board & IPOS-rep. from Accreditation & Eligibility Determination Division State Licensing Agency, ED-GLOS	0.5	Accreditation and State Licensing
2	ED- AFMS,GLOS School - SFA & Bursar	0.5	Accounting controls, GA/ Lender/ Servicer and School participation in Title IV programs, School change of ownership
3	ED- AFMS, IPOS School - SFA , Bursar, ED-AFMS/IFMD	1.0	*CBS:* award simulations, participation process, allocation/re-allocation and tracking of funds
4	ED-IPOS, Schools-SFA ED-DCS	4.0	Schools program participation, default rate tracking, appeals process. Defaulted debt collection process, Repayment counseling, Repayment information (deferments, forbearances, etc.,)

School eligibility determination data

School audit/ review/ suspension/ termination/ ownership, School credit status Aid package, business information |
5	GAs, Student Representatives, Lenders	1.0	FFEL and Direct Loans: Deferments, forbearances, discharges, cancellations, & transfers between
6	GA, ED-TIVWAN Lenders, Student Representatives Schools-SFA, Schools-Bursar	0.5	Title IV WAN system usage invoicing and payments
7	GA, ED-GLOS, Lender	2.0	GA, Lenders & Servicers Program and Financial Oversight
8	Private Scholarship Agency, ED-CPS, ED-PTAS State Grant Agency	0.5	Aid eligibility, award & funding
9	Schools, ED-CPS, Student Representatives, ED-PTAS, Schools-SFA, Bursar	1.0	Aid applications, MYP note
10	Lenders, ED-LCS, Student Representatives	1.0	Loan Consolidation
11	Student Representatives, School-SFA, ED-DL, Lenders, Banks	1.0	Loan Repayment

Session #	Organizational Representation	Days Needed	Subject Matter/ Data Association
12	ED-DCS & CA	0.5	Defaulted loans
	ED- DCS & Credit Bureau	0.5	Credit Information and Loan status
	ED-CFO, ED-AFMS (Financial Systems Interface and Requirements)	1.0	EDCAPS interfaces (Account balancing and reconciliation etc.)
	ED-DCS & DOD	0.5	Offset & wage garnishment
	ED- DCS & DOJ	0.5	Applicant drug/ conviction information
	ED-DCS &DOT	0.5	Offset information
	HUD, ED-DCS	0.5	Default loan alerts
	ED-DCS	0.5	Wage garnishment
	Payment Center, ED-DCS	0.5	Loan repayment information
	ED-DCS	0.5	Offset and wage garnishment
	ED-DCS , Postal Service	0.5	Skip tracing
13	Direct Loans Taskforce, Bank facilitating Lockbox	0.5	DL Payment Information
14	GA, Schools- SFA & Registrar	0.5	GA & schools default rates
15	GA, Schools- Bursars, SFA, ED-DCS	1.0	Skip tracing, AEA & re-insurance fees, closed school notices, GA reviews
16	ED-HEP, ED-(AFMS (IFMD)	0.5	Title III schools
17	HHS, ED-CPS	0.5	Applicant income information
	INS, ED-CPS	0.5	Non-citizen eligibility status/determination
	IRS, ED-CPS	1.0	Skip tracing, AGI information etc.
	ED-CPS, Selective Service	0.5	Applications: Selective service status
	ED-CPS, SSA	0.5	Applications: SSN & citizenship status
	ED-CPS, VA	0.5	Participant demographic and income information
18	ED-DCS, Lenders, School-SFA, Registrar	1.5	Special allowances, Disbursement authorizations and information, origination records, enrollment status, repayment options
19	*TBD*	1.0	Financial simulation modeling
20	Student Representatives, School-SFA, ED-PTAS	2.0	Student disbursement, Repayment notification, counseling Repayment plans, invoicing
21	ED-Regional Offices	0.5	Invoice & schedule disbursements
22	Dept. of Labor	0.5	Financial simulation modeling
23	State Education Dept., ED-CBS	0.5	Low income school list
24	State Grant Agency, ED-PTAS Grants Branch (Fred Sellers)	0.5	SSIG
25	State Treasury, ED-IPOS, ED-DCS ????	1.0	State offset information
26	Schools-SFA, Bursar	0.5	Disbursements, reconciliation, unused funds

Session #	Organizational Representation	Days Needed	Subject Matter/ Data Association
27	Schools-SFA, Registrar, Clearinghouse, NSLDS	1.0	Enrollment status
28	Servicers, ED-GLOS, GA, Lenders	1.0	Servicer defaults rates, appeals, profiles
29	Secondary Markets (e.g., Sallie Mae), ED-GLOS	1.0	Program and financial oversight
30	State unemployment Agency, ED-DL, Lender	0.5	Employment information
31	California State(Allison Jones), ED-CPS	1.0	Participant demographic information

APPENDIX F

Prototype/Pilot Project Working Paper

APPENDIX F
Prototype/Pilot Project Working Paper

The following working paper was developed as a result of Project EASI Core Team meetings conducted during the Project EASI Requirements Support task order. This working paper provides the list of candidate prototype, pilot, and interim improvement projects that would be the initial input to Optional Task 10.

<div align="center">

PROTOTYPES AND PILOTS
for
PROJECT EASI AND PROJECT EASI/ED

</div>

I. OVERVIEW

Full realization of the Project EASI (Easy Access for Students and Institutions) vision through Project EASI activities or through Project EASI/ED (Easy Access for Students and Institutions/US Department of Education) will take years to achieve. In the interim, pilots and prototypes may be used to demonstrate the Project EASI vision and to validate Project EASI/ED requirements and concepts. In addition, the Department of Education (ED) may undertake some projects, consistent with the Project EASI vision and with Project EASI/ED requirements, to provide near-term benefit to the client community using the current ED systems. The purpose of this paper is to provide a basis for common understanding of the role these projects could play in Project EASI and in Project EASI/ED, and to facilitate the next step toward implementing some of these ideas.

This paper is organized into the following sections:

- **Section II - DEFINITIONS**. This section defines the principal terms used in this paper, and explains broadly how each of the various candidate initiative types can be used to further Project EASI and/or Project EASI/ED.

- **Section III - PROJECT EASI CORE TEAM RECOMMENDATIONS**. This section lists and defines each of the candidate projects identified by the Project EASI Core Team during its June 1997 meeting. It also presents the Core Team's ranking of these initiatives, based upon its July 1997 meeting.

- **Section IV - RECOMMENDED NEXT STEPS**. This section outlines a recommended approach to moving this facet of the Project EASI initiative toward implementation.

- **Appendix A - PROJECT PLAN SHELL**. This appendix presents a brief outline to be used by Project EASI Core Team members as they further define the candidate projects assigned to them during the July 1997 meeting.

II. DEFINITIONS

This section briefly defines each of the key terms used in this paper. Terms fall into two categories: project definitions and candidate initiative definitions.

Project Definitions

Project EASI is a joint effort between ED and the postsecondary education community to define and develop a customer-focused postsecondary education system. The Project EASI vision focuses primarily on delivery of postsecondary student financial aid, but is intended to encompass all interaction between prospective students, students, and family members with the postsecondary education system.

Within Project EASI, **Project EASI/ED** is ED's initial effort to implement the Project EASI vision within the scope of its own business processes and systems. Project EASI/ED encompasses the functionality of the 16 systems currently used to manage and deliver aid under Title IV of the Higher Education Act of 1965. It also encompasses the associated processes and business responsibilities, and ED's interaction with external community members (including schools, lenders, guarantors, secondary markets, students, prospective students, family members, state agencies, etc.)

Within the Project EASI vision, Project EASI/ED would be complemented by concurrent, independent but coordinated initiatives by members of the non-ED postsecondary education community to improve their own systems and processes in accordance with the Project EASI vision.

Candidate Initiative Definitions

For the purposes of this paper, three candidate initiative types are used: prototypes, pilots, and interim improvements.

Prototypes are used to demonstrate a specific aspect of system functionality, particularly a user interface. They are used to inform the design of the overall system (e.g., by providing insight into how user's prefer to interact with the system) and to prove the workability of a concept (e.g., whether a system solution is achievable and appropriate for given functionality, whether particular technology can be used effectively).

Pilots are used to try out business processes or concepts (e.g., invoice disbursement, multi-year promissory notes) among a representative subset of the organizations ultimately expected to implement the process. Pilots may use prototype technology to facilitate the trial. Pilots may be used to inform the design of a system (e.g., by clarifying or modifying requirements) and to prove the workability of a concept (e.g., demonstrating that invoice disbursements work).

Interim improvements involve using new technology or techniques (in this case consistent with Project EASI/ED requirements and architecture) along with current systems to provide near-term benefit to users. An example of an interim improvement would be use of the Internet to access data from various ED systems regarding a student's financial aid history.

Prototypes and pilots may be valuable to Project EASI, as well as to Project EASI/ED. For Project EASI prototypes and pilots, members of the Project EASI Core Team should be responsible for:

1. Identifying initiatives underway in the non-ED postsecondary education community;

2. Assigning a member of the Project EASI Core Team responsibility for monitoring each initiative considered relevant to Project EASI and/or to Project EASI/ED;

3. Establishing an initial understanding of the initiative's scope, purpose, technology, participants, and progress to date;

4. Monitoring the initiative's progress and ultimate result, including lessons learned by the organization(s) participating in the initiative;

5. Acting as a champion for the initiative within ED by facilitating discussions regarding issues related to the initiative and by advocating change, where necessary, to enable its success; and

6. Reporting on the initiative at the Project EASI Core Team meetings so that value can be added to Project EASI/ED and to Project EASI overall.

Pilots and prototypes in this category are those initiatives that are undertaken by non-ED organizations.

Prototypes, pilots, and interim improvements are all applicable to Project EASI/ED. This category is defined as those initiatives undertaken by ED, alone or in conjunction with representatives of the external community, and that are intended specifically to test Project EASI/ED concepts, requirements, or technology; to inform the Project EASI/ED design; or to enable ED to provide interim benefits to its user community building upon the current Title IV systems. These initiatives will require the commitment of resources working against a well-thought-out plan to demonstrate or test specific capabilities or concepts within a specified period of time.

III.   PROJECT EASI CORE TEAM RECOMMENDATIONS

As a first step toward initiating prototypes, pilots, and/or interim improvement projects under Project EASI, the Project EASI Core Team developed a list of candidate initiatives. These are:

- **Interim Access to Existing Data on ED Systems Via Internet**. Using data from existing Title IV systems (e.g., Central Processing System, National Student Loan Data System), create a repository of student account data accessible via the Internet and allow students to query this database.

- **Interim Access to Existing Data on ED Systems Via Telephone**. Using data from existing Title IV systems, create a repository of student account data and allow students to query this database using telephone inquiry.

- **Invoice Disbursement Pilot**. Pilot the invoice disbursement method (i.e., just-in-time disbursement) as defined within the Project EASI/ED requirements with ED, Treasury, and a cross-section of schools.

- **Use of Certificate Authority**. Develop a workable certificate authority model for use within Project EASI/ED.

- **Electronic Authorization**. Demonstrate the feasibility, security, and enforceability of the requirement under Project EASI/ED for aid recipients to authorize disbursements electronically over the Internet or via telephone.

- **Multi-year Promissory Note**. Pilot a multi-year promissory note as defined by Project EASI/ED (i.e., multiple loans over multiple years for multiple programs with like terms).

- **Virtual Application**. Eliminate the Free Application for Federal Student Aid (FAFSA) by drawing together student data already resident on existing systems.

- **Smart Cards**. Explore applications for this technology.

- **On-Line Debt Management Counseling**. This is also known as "informed borrowing." Provide students on-line access to information regarding the amount they have borrowed and their options for repayment, and obtain their acknowledgment electronically.

- **Use of Admissions Data Available Electronically to Feed Financial Aid Application/ Use of Financial Aid Application Data Available Electronically to Feed Admissions**. This is also known as the "California project." Enable students or schools to pull data an applicant submits to a school on an admissions application or on the FAFSA for use on other electronic application forms.

- **Hot Link for Drill Down**. Build a URL table that can be used to route customers from one database to another organization's database or Web site to obtain more detailed information regarding their loan(s) or portfolio.

- **Web Entry of Disbursement Data to Pell Grant Recipient and Financial Management System (PGR/FMS).** Build an application that would enable small schools to enter Pell disbursement data on-line via the World Wide Web (WWW) and submit it to PGR/FMS.

- **Smart Free Applications for Federal Student Aid (FAFSA)**. Develop logic for the FAFSA on the Web to take this concept further by adding state-specific logic so that individuals only have to address those questions pertinent to their own state.

- **Electronic Data Interchange (EDI)**. Demonstrate the applicability and feasibility of using EDI for Project EASI/ED transactions with schools, lenders, and/or guarantors.

- **Financial Aid Modeling**. Enable students to generate an early estimate of the financial aid for which they would be eligible for a specific school.

- **Self-Calculated Eligibility**. This is also known as "instant EFC" or "EFC lite." Allow an applicant to see a preliminary Estimated Family Contribution (EFC) as soon as they submit their FAFSA to ED.

- **Repayment Facilitation**. (See requirement 2110 in the Project EASI/ED Business Area Requirements Document, July 1997.) Prototype the functionality that would facilitate a borrower in establishing an automatic payroll deduction or an automatic funds transfer to make loan repayments.

- **School Profile for Program Management and Oversight**. Create a school profile that could be used to support program management and oversight by tracking key performance indicators (using data currently available on the Title IV systems) or to enable a school to track the status of various submissions (e.g., whether their re-certification was received by ED, whether they are timely on various standard reports).

- **State Aid Origination and Disbursement**. Demonstrate the ability to originate and disburse state aid within processes indicated by Project EASI/ED requirements.

- **Common Origination/Disbursement Record**. Pilot a common origination and disbursement record.

- **TRIO Access to Current Data**. Enable TRIO schools on-line access to data within ED's current Title IV systems.

- **Distance Learning Enrollment Tracking**. Prototype the enrollment tracking process for distance learning (i.e., simultaneous enrollment at multiple schools using non-standard academic periods).

Some of the candidates identified above will be achieved through the Project EASI/ED development process (e.g., definition of a common origination and disbursement record). Overall, the list was developed without any judgment regarding feasibility, value, or cost to ensure that the broadest possible range of ideas was explored. During the July 1997 Project EASI Core Team meeting, the group voted on the projects it most wanted to see taken further. The team voted on two categories of initiatives: those that would be used to inform the design/offer proof of concept, and those that would afford ED and the community interim improvements. The results of this process, listed in descending order or priority, are:

Inform the Design/Proof of Concept

1. multi-Year Promissory Note Pilot
2. Smart FAFSA
3. Interim Access to Existing Data on ED Systems Via Internet and/or Telephone
4. Electronic Authorization
5. Common Origination/Disbursement Record
6. Invoice Disbursement

Interim Improvement

1. Self-Calculated Eligibility
2. Smart FAFSA
3. Interim Access to Existing Data on ED Systems Via Internet and/or Telephone
4. Web Entry of Disbursement Data to PGR/FMS
5. On-Line Debt Management Counseling
6. EDI

Subsequent to the voting process, the Project EASI Core Team assigned individuals to work on further defining each of the highest ranked candidate initiatives. These individuals were tasked to develop a "plan" for their initiative by August 25, 1997. A recommended shell for these plans is included as Appendix A of this paper.

IV. RECOMMENDED NEXT STEPS

While the list of candidate initiatives identified in the preceding section covers a broad range of possibilities, it is not exhaustive. In addition, thus far the list reflects only the Project EASI Core Team members' ideas and the ranking process did not rely upon a structured evaluation. While the Core Team can clearly move forward with its responsibilities for Project EASI overall with respect to these initiatives, further coordination and evaluation is needed for Project EASI/ED activities. The following steps are recommended to move this aspect of Project EASI/ED forward:

1. Circulate the list of candidate initiatives to key managers and staff throughout the ED Office of Postsecondary Education (OPE) to solicit additional candidate initiatives.

2. Define a structured set of evaluation criteria that can be used to rank and prioritize the resulting list of initiatives. These criteria should encompass considerations such as complexity, time required, availability of necessary resources (staff, funding), return to the community, return to ED, value to Project EASI/ED.

3. Rank and prioritize the revised candidate initiatives list (with Project EASI Core Team and ED participation), identifying candidates for fiscal year (FY) 98 implementation and for FY 99 implementation.

4. Obtain senior management support for pursuing these initiatives.

5. For each FY98 candidate, develop a plan that fully defines the initiative.

6. Implement the FY98 initiatives and monitor the results.

For Project EASI initiatives, the recommended course of action is for the Project EASI Core Team to undertake the responsibilities defined in Section 2 of this paper, beginning with a survey of community activities to build a comprehensive list of the "Big EASI" initiatives that should be monitored and championed.

APPENDIX A
PROJECT PLAN SHELL

Based upon a subsequent discussion with representatives of the Project EASI Core Team, it appears that the definitions used as a basis for voting on the candidate initiatives were revised or blurred when the Team met to discuss follow-on actions. Given this, the need to coordinate prototype/pilot/interim improvement projects with ED before they proceed for Project EASI/ED, and the desire to make the best use of the Core Team members' time, the following shell should be used for the "plans" Core Team members are developing for the highest-ranking initiatives.

The following list shows the initiatives selected for follow-on work and the Core Team member(s) assigned responsibility for each (bold type indicates lead):

Inform the Design/Proof of Concept

1. Multi-Year Promissory Note Pilot - **Fred S**., Barry, Bill B.
2. Smart FAFSA - **Keith J**., Kay J., Paul S., Otto R., Ellen F., Mickey R.
3. Interim Access to Existing Data on ED Systems Via Internet and/or Telephone - **Bill B**.
4. Electronic Authorization - **Paul S**., Kay J., Molly H., Barry
5. Common Origination/Disbursement Record - **Molly H**.
6. Invoice Disbursement- **Molly H**.

Interim Improvement

1. Self-Calculated Eligibility -
2. Smart FAFSA - **Keith J**., Kay J., Paul S., Otto R., Ellen F., Mickey R.
3. Interim Access to Existing Data on ED Systems Via Internet and/or Telephone - **Bill B.**
4. Web Entry of Disbursement Data to PGR/FMS -
5. On-Line Debt Management Counseling - **Paul S**., Kay J., Molly H., Barry
6. EDI - **Molly H.**

INITIATIVE PLAN

INITIATIVE NAME:

INITIATIVE TYPE: Project EASI _____   Project EASI/ED _____ (Check ONE)
                      Prototype _____ Pilot _____ Interim Improvement _____ (Check ONE)

INITIATIVE DESCRIPTION:

> *Short paragraph defining the initiative s PURPOSE in relation to Project EASI or to Project EASI/ED (based upon the Initiative Type) and of the initiative s SCOPE (i.e., functionality included).*

RESOURCES REQUIRED:

> *Identify at a high level the resources required to develop the prototype, implement the pilot, or implement the interim improvement. Consider ED and non-ED involvement, systems resources, time, and funds.*

INITIATIVE VALUE:

> *Short paragraph stating clearly the expected benefit of the initiative to Project EASI, Project EASI/ED, ED, and/or the community.*

RELATED INITIATIVE(S):

> *Working from the list of candidates identified in Section 2, note the title of any other initiatives that are closely related to this one.*

NOTE: If your definition of the initiative differs from the one in Section 2, be sure to present the revised definition here. If your initiative, as now defined, is applicable to Project EASI and to Project EASI/ED, prepare separate worksheets for each. Be careful NOT to blend together the definitions of various initiatives. The larger and more complex each candidate is, the less "doable it is as a prototype or pilot.